

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA, ex rel.)
W.A. DREW EDMONDSON, in his)
capacity as ATTORNEY GENERAL)
OF THE STATE OF OKLAHOMA,)
et al.)
)
Plaintiffs,)
vs.) CASE NO. 05-329-GKF-PJC
)
TYSON FOODS, INC., et al.,)
)
)
Defendants.)

TRANSCRIPT OF NONJURY TRIAL PROCEEDINGS
FEBRUARY 18, 2010
BEFORE GREGORY K. FRIZZELL, U.S. DISTRICT JUDGE
VOLUME 100, A.M. SESSION

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FEBRUARY 18, 2010:

MR. BULLOCK: Judge, it is a great privilege, and really a relief to be to this day. I appreciate the moment when the lawyers turn over the case and the difficulties of dealing with it to the ultimate decision maker. It moves the weight from our shoulders to the court's. And we appreciate your taking on this very important issue where so much hangs in the balance.

We have here today, to represent as a person the State of Oklahoma, in the way of the Secretary of Environment, Mr. J.D. Strong over in the jury box. Perhaps he wishes to be the one in judgment, but that's not his fate today.

Just so that the court is aware of the way that we will lay this out is that I will address the court first, setting out in very general fashion our case for the causation of the injuries here and the liability of the defendants for those injuries.

Mr. Page will then address on a more technical level the scientific proof of causation

1 and injuries. And finally, Mr. Nance will address
2 the court concerning remedy and some of the
3 particular defenses which have been raised,
4 including the issues with Poultry Registry Feeding
5 Act.

6 It is important that I put this caveat on
7 the closing, is that this is supplemental to the
8 proposed findings and the Rule 52(c) arguments that
9 the court has heard. We're not attempting to cover
10 all of the evidence or more than briefly cover all
11 of the claims and defenses. And so to the extent
12 that they're not covered here, I hope the court will
13 accept those others as argument and as closing
14 argument.

15 As the court is aware, this matter is about
16 the Illinois River, which is a beautiful and unique
17 part of the geology and inheritance of the state of
18 Oklahoma. We all know, either through the
19 presentation in this courtroom or through our
20 personal experience, its beauty and its importance
21 to us.

22 I'm going to have to learn how to use this
23 here, so stick with me, if you will.

24 Of course, the history of this waterway has
25 been well known for ever since man came here. And

1 when the recorded history began, we know that as
2 early as 1849, it was reported that this is a
3 beautiful and clear stream. 1870 it was said to be
4 one of the prettiest rivers on the continent,
5 sparkling with crystal waters.

6 1952, when this industry was only in its
7 early part of growth, it was reported that the river
8 was flowing through oak-and-hickory-clad Ozark hills
9 in a succession of sparkling riffles along quiet
10 pools.

11 In 1957, Tenkiller Lake was described as
12 Oklahoma's most beautiful lake.

13 You've heard in the presentations before
14 the court of a great number of personal
15 recollections of the river. I can tell you from
16 personal experience that in its early years, they
17 were accurate. It was and can be again an
18 absolutely spectacular river.

19 But that's not the reality that we're faced
20 with today. To too great of an extent, it is a
21 green, slimy mess with its water covered with
22 invasive algae, the rocks green and the filamentous
23 green algae that you heard so much of polluting it
24 and slowing its waters and creating a number of
25 significant environmental injuries. The lake itself

1 has turned green and with too often a scum forming
2 at the top of it.

3 Those who remember this lake remember
4 standing on bluffs and looking down 15 to 20 feet to
5 the rocks below. Such experiences are denied
6 today's generation and will be denied to future
7 generations unless we can persuade the court of both
8 the importance and the legal reasons why the actions
9 of the defendants should be enjoined.

10 One of the things which there has been some
11 talk of in this court is to compare this waterway
12 with others in the state or region.

13 Those actually have little legal cognizance
14 that -- unless one looks at a stream in terms of --
15 or lake in terms of those things that would make it
16 a reference so that you can make scientific
17 comparisons, there's really little currency in
18 talking about whether other waterways have been
19 polluted or whether other waterways have been
20 neglected and ill-treated. You need to look at the
21 ecoregion, the geology, the climate, the land use,
22 other potential sources, and only then do the
23 comparisons that the defendants wish to make have
24 any currency.

25 But the real question is we went from, in

1 our lifetime, the clear, sparkling waters of the
2 Illinois River and Lake Tenkiller to the green,
3 algae-choked river that we have today. One of the
4 first questions for the court is what caused it.
5 And the evidence is actually overwhelming in this
6 case that the poultry industry's operations in this
7 watershed are a significant reason, a significant
8 cause for the damage which has been done.

9 The first indication of that, and perhaps
10 one of the easiest to grasp, is the mass balance,
11 where over 76 percent of the phosphorus coming into
12 this watershed each year is from poultry. And you
13 compare that with the 3.2 percent for which humans
14 are responsible for and even such as commercial
15 fertilizer 7 and a half percent, and poultry
16 absolutely overwhelms all other potential sources.

17 Defendants, in response to this, said that,
18 well, just because it comes into the watershed
19 doesn't mean that it's going to get into the water,
20 that it might be, in Dr. Sullivan's words, put in a
21 warehouse. But of course, we know that that is not
22 the fate for the poultry phosphorus which comes into
23 this watershed and goes through the defendants'
24 birds.

25 Another way to look at it, it's just in the

1 sheer volume of waste produced by this industry each
2 year. 354,000 tons of waste each year.

3 The plaintiff, the State of Oklahoma's
4 estimate of that really stands largely
5 unchallenged. And perhaps the reason for that is
6 that it is truly a conservative estimate, that the
7 actual amount of waste being produced here is very
8 well more than the 354,000 tons.

9 Another way to look at it, and perhaps most
10 revealing, is when we look at the trend in the mass
11 balance, when you look at the fact that in 1949
12 poultry accounted for less than ten percent of the
13 phosphorus inputs and the other sources were 90
14 percent. That changed rather dramatically between
15 1959 and 1964, when poultry went to better than 70
16 percent. And it has substantially remained there
17 ever since.

18 Now, to give some concept as to what this
19 means, I point the court to the letter from Martin
20 Maner -- the report from Martin Maner with the State
21 of Arkansas in 1988, where he reports that the
22 poultry waste in Benton and Washington County equals
23 the waste, in terms of its nutrient values, of more
24 than 8 million people. And none of that waste is
25 treated.

1 Defendants themselves give you an
2 indication of how we got from these clear, crystal
3 waters to the green and slimy river bottoms that we
4 have today when they pointed out when they
5 calculated in their Joint Exhibit 3125 that the mean
6 STP for fields on which the -- are targeted for
7 poultry waste, the mean is 402. The median is 292.
8 And as the court is aware, that that is well beyond
9 anything which one would propose to be needed for
10 growing plants.

11 Making the point that the phosphorus that's
12 brought into this watershed for poultry is not put
13 into the bank that Dr. Connolly posited or the
14 warehouse that Dr. Sullivan posited is the
15 distribution of the waste that I have here. It's
16 Exhibit 2516 of the plaintiff.

17 And the testimony was that this is a
18 conservative estimate showing the sections in which
19 we could determine that waste had been disposed,
20 understanding that in the state of Arkansas, the
21 disposition of waste is kept substantially a
22 secret.

23 It is difficult to find those records or to
24 obtain those records. And so the actual pattern in
25 Arkansas is certainly much broader than anything

1 that we have presented here.

2 Now, once you have the waste on the fields,
3 the question -- and much time was spent here on this
4 question -- is, how does it get into the water.
5 Well, of course, the most obvious is that it just
6 runs off the fields into the streams.

7 I present to the court the stream map,
8 which is 2519, and that presents the map of the
9 third order and above streams. It also -- in
10 shading, you can see some of the first and second
11 order streams.

12 The point of this is, just as Dr. Grip
13 described, that this is a dense network of streams.
14 Defendants' suggestion, which has been made many
15 times in this court, that the -- that there is a
16 place that the streams don't drain, that there are
17 places which perhaps are miles from a stream is pure
18 fantasy. There are -- this is a well-drained
19 watershed.

20 It's not swampy; it's dry, cherty soils,
21 and once clear streams to drain it. Not only that,
22 defendants themselves talked about the role the
23 cattle play in assisting the runoff and the
24 transport of the phosphorus from poultry.

25 Dr. Sullivan explained to the court the way

1 that the cattle facilitate the transport by
2 compaction of the soil, by the thinning of the
3 vegetation and by channelizing the fields.

4 Finally, there's, of course, the too much
5 talked about and much overstated process of the
6 occasional direct deposit by cattle.

7 But regardless, it is clear that poultry
8 has played a major role in getting us to where we
9 are today.

10 Now, at the conclusion of the evidence and
11 upon the court's full review, State of Oklahoma
12 believes that there is -- that it is absolutely
13 clear that the court should find that the defendants
14 have intentionally created a nuisance in violation
15 of Oklahoma law, intentionally created a nuisance in
16 violation of federal law, and that they have also
17 violated 2-6-105 and 2-18.1 of the Oklahoma Code.

18 On the issue of causation, though, the
19 standard -- and we've spoke of this before, we
20 believe the court should look at the *Herd* case as
21 well as Judge Eagan's analysis in the *City of Tulsa*
22 case.

23 *Herd* is interesting because it really
24 reflects on many levels the same issues that this
25 court struggles with. That is, it was a nonpoint

1 case. It was a case of where a number of defendants
2 had deposited the mining waste in that case where it
3 could go into the winds and deposit itself nearby in
4 the towns and on the farms.

5 To paraphrase the causation standard in
6 *Herd*, this is not you grew poultry and -- this is
7 not merely a case that the defendants grew poultry;
8 it is that they grew poultry and left the waste very
9 near the contaminated community. In fact, the
10 contaminated waters and such waste material has been
11 shown to contain the contamination that occurred in
12 that community and those waters, that that's the
13 test of causation for this case.

14 Similarly, in the *City of Tulsa* case, Judge
15 Eagan found that the test was whether each defendant
16 contributed to phosphorus loading in the watershed
17 or, as we read it, in the waters. And the
18 phosphorus in the waters has resulted in the harm.
19 That's the question of causation that the court is
20 faced with here.

21 As for specific causation, that is, each of
22 the -- that is causation caused by each of the
23 individual defendants, what we have shown is that
24 each of these defendants has generated massive
25 quantities of poultry waste; that waste is

1 land-applied close to the houses where it is
2 generated; it runs off in environmentally
3 significant amounts; that even small amounts can be
4 and are environmentally significant in this
5 watershed; and the P load -- those phosphorus
6 loadings are causing injuries to the water.

7 It is also important that the court
8 appreciate that this -- the result of this conduct
9 is to create an indivisible injury. And I refer the
10 court to the *Union Texas Petroleum v. Jackson* case
11 and, again, the *City of Tulsa* case where the court
12 set out that once you have an indivisible injury, it
13 is not necessary to divide that injury, that the
14 plaintiff can look to all of the defendants and to
15 each of the defendants to remedy that pollution.

16 Let's talk some about specific causation,
17 just so that we're clear that each of the defendants
18 has been shown to have caused the injury that we are
19 talking about here.

20 First of all, we have shown the court the
21 aggregate number of the bird production by each of
22 the defendants in the watershed. And what you see
23 is that the defendants go from Cal-Maine in the
24 period from 2000 to 2007, even while they were
25 withdrawing from the watershed, still put almost 5

1 million birds in the watershed; Tyson, 700 million
2 birds. And the other defendants each individually,
3 their contribution of birds is set out in
4 Exhibit 2528. And clearly we have proven that part
5 of our case as to each of them.

6 Further, we have proven that each of them
7 produce truly significant quantities of waste. And
8 again, on Exhibit 2532, what the court sees is that
9 that ranged anywhere from almost 3,000 tons by
10 Cal-Maine, up to 167,000 tons by Tyson.

11 Now, from there, of course, once we show
12 the issue of causation comes the issue of the
13 liability of the defendants for the injuries that
14 they've caused. And we've spent a lot of time
15 talking about vicarious liability.

16 First of all, I think the court should look
17 at the issue of direct liability. And that is that
18 each of these defendants has structured and
19 conducted its business in the IRW such that
20 pollution of the waters of the IRW is inevitable.
21 And, in fact, the court will recall a great deal of
22 both testimony and argument concerning the
23 defendants' business model.

24 Now, what we have shown in terms of that
25 business model is that for purely economic reasons,

1 for no other reason than to increase the bottom
2 line, the defendants have concentrated their poultry
3 operations, and in this case concentrated them in
4 this watershed. They've placed millions upon
5 millions of birds in the IRW. They import the
6 phosphorus to feed those birds by the truck and
7 trainload. Vast quantities go into the birds, and
8 the result is a waste which is high in phosphorus.
9 The defendants know and acknowledge that the waste
10 is disposed of by land application.

11 And the defendants make no pretense that
12 they do nothing to manage that waste so that it
13 doesn't cause environmental injury.

14 There's also the question, though, of the
15 direct liability of three particular companies on a
16 whole different level. That is, when we point to
17 the issue of -- when the defendants attempt to say
18 the growers are a cause, some of these defendants
19 have to point to themselves.

20 Here I have some of the evidence regarding,
21 for instance, Tyson. Their research farm has STP
22 levels as high as 726. Cargill's breeder farm has
23 levels as high as 958. And it is important in terms
24 of Cargill to recognize that for years after, and I
25 believe that it's at least three, maybe as much as

1 five, after Cargill received this 958 and the other
2 soil tests for its breeder farms, it continued to
3 apply waste, only stopping on the eve of this --
4 only beginning to transport that waste out of the
5 watershed on the eve of this case.

6 And similarly, there's George's where, on
7 the Ritter farm, we find some of the highest levels
8 in the entire watershed; that is, as high as 2166
9 for George's Ritter farm. George's, after that was
10 received, similarly continued to apply waste, but
11 eventually did begin to transport out the waste from
12 its own operations.

13 None of these defendants claim that they
14 are transporting out all of the waste from their
15 operations from -- the waste from their birds. They
16 claim only to the extent that they're transporting
17 out all of the waste today it is only from these
18 operations. But that does nothing to relieve these
19 defendants from the continued pollution of Oklahoma
20 waters from the runoff from these farms in Arkansas
21 into the waters of the IRW and eventually into the
22 waters of the state of Oklahoma.

23 Now, once we get past the question of
24 direct liability, there is the questions of
25 vicarious liability.

1 Now, the first, and I would think the most
2 obvious point, is that the defendants should be held
3 liable under classic principal-agent theory or what
4 I learned in law school as the master-servant
5 theory.

6 Now, there are two cases on point there,
7 both of them looking at the very type of model of
8 using the contract growers for an integrator, and
9 where the integrator was found liable for the
10 environmental injuries caused. There's *Tyson v.*
11 *Stevens*, which was an issue of odor from a hog
12 farm. There's also a *Sierra Club v. Tyson*, which
13 was an environmental injury from ammonia release, in
14 that case from poultry.

15 The fact is that these defendants each have
16 complete and total control of the operations of
17 their growers. Their growers are there to grow
18 birds. And a necessary and inevitable part of that
19 task is the disposal of the waste, of the cleaning
20 out of the barns, and just -- and as such, that
21 total control clearly extends to there.

22 And, in fact, there is testimony in this
23 record that the defendants have occasionally
24 exercised that. They have -- there's been testimony
25 concerning requiring the growers to move or dispose

1 of piles of waste.

2 There's a case of Cal-Maine with Lois
3 Hampton. Further, their, "recommendations" to their
4 growers as exemplified by Exhibit 1283, where Tyson
5 recommends the spreading of waste immediately upon
6 moving it out of the barn.

7 I want to just for a brief moment talk
8 about this matter of recommendations and
9 suggestions. I well appreciate the pride with which
10 the growers protested that they were independent.
11 But on the other hand, every employee well
12 understands the import of a "suggestion" from the
13 boss. You ignore it at your peril. These growers
14 ignore suggestions at their peril.

15 Even beyond the issue of control is the
16 issue of 427B. 427B is the issue upon which Judge
17 Eagan initially entered the summary judgment in the
18 *City of Tulsa* case, that decision, of course, having
19 been withdrawn pursuant to settlement. But the
20 analysis, nonetheless, still works.

21 That is, she rested upon two issues there
22 when she made that conclusion. First of all, that
23 the production of waste is a necessary --
24 necessarily follows the growing of poultry; and
25 secondly, that the defendants in that case had

1 admitted that pollution was the likely result.

2 Now, that same evidence on which she
3 depended is before this court, albeit the defendants
4 would wish today to distance themselves from that.

5 But related to the issue of the defendants
6 knowing the likely result, is the issue of the
7 intentionality of the defendants. As I stated to
8 the court, our nuisance and trespass claims are, in
9 fact, pled as intentional torts.

10 Under the Restatement of Torts, Section
11 825, one is guilty of intentionally interfering with
12 the use of enjoyment of one's property or the
13 creation of a public -- or the interference of a
14 public right when either they act with the purpose
15 of causing it, which certainly the defendants don't
16 intend to pollute the water, but also where -- or do
17 not have the purpose of polluting the water, their
18 purpose is to make money. And they make no
19 apologies for that, nor should they.

20 But secondly, you act with an intent when
21 you know that what you are doing is resulting or is
22 substantially certain to result from your conduct.

23 Defendants clearly -- this evidence clearly
24 establishes that the defendants in this instance
25 have acted intentionally and that they should know

1 better and do know better.

2 This is not a issue of what do their
3 growers believe. Defendants have attempted to hide
4 behind the intent of their growers. Of course, the
5 evidence in this case, the plaintiff's case, has not
6 addressed the issue of the intent of individual
7 growers, nor should it.

8 I'll give a quick analogy to the court.
9 Let us suppose that you have a car dealer selling a
10 junk car. He knows the transmission is shot. He
11 sends out, though, a young salesman who promotes
12 this as a great and sound vehicle, and the people
13 drive it off the lot.

14 Later when the dealership is charged with
15 fraud, with intentionally selling a junker, the
16 company cannot hide behind the good but uninformed
17 intent of the salesman. The issue is what did the
18 dealer know. What was the dealer's intent when that
19 deal went down.

20 Similarly, these companies cannot hide
21 behind whatever mistaken belief their growers might
22 have. The issue here is when they operate their
23 poultry operations, when they produce all of this
24 waste, when they turn their back on the disposal of
25 it, what do they know to be the consequences, in the

1 words of it, the certain result, substantially
2 certain result of their conduct.

3 The evidence here is they absolutely know.
4 And there's a great deal of evidence of that. For
5 instance, there was the Clinton task force. This is
6 as early as 1993. And there, Claude Rutherford, an
7 employee of Simmons, but there as an industry
8 spokesman, he reported that there would be -- that
9 from the use of poultry waste, you had environmental
10 degradation, water quality problems, problems with
11 the drinking water, and impacts on the aesthetics,
12 1993.

13 In 1998, you have Ron Mullikin with
14 Peterson, one of the smallest companies in this
15 group of defendants, and he reports to his company
16 there's no new solution in dealing with animal waste
17 and the environmental problems it's causing. Over a
18 decade ago defendants knew.

19 Then he concludes that the solution may be
20 that our industry must make some changes in the way
21 we do business. They have not made those changes.

22 You also have -- in terms of the
23 defendants' knowledge, you have Cargill's Best
24 Management Practices manual, where Cargill tells its
25 growers that even if you use the Best Management

1 Practices, that there will be -- some level of
2 nutrient loss will occur. Cargill is under no
3 illusions here as to the realities of its
4 practices.

5 You have Tyson. You recall Preston Keller,
6 who all that has survived of his PowerPoint is a
7 draft, but he explained that that was substantially
8 what he presented while he was at Tyson. And this
9 is pre-January of 2005. And there he presented that
10 phosphorus is mobile, it causes water quality
11 problems, and it accumulates in the soil.

12 You have George's and the statements from
13 the desk of Monty by Monty Henderson, where he
14 reports to all that wish to read it, during major
15 rain events some of the phosphorus becomes soluble
16 and washes off into streams and lakes.

17 He also tells them that continuous use on
18 the same land can increase the P levels in soil.
19 These excess levels can dissolve into runoff rain
20 water and get into streams creating an imbalance.

21 Again, you have Cargill with their
22 Precision Ag program where they identify the IRW and
23 some other surrounding areas with a high phosphorus
24 level.

25 They -- Tyson at one point tracked its

1 waste, and so did Peterson. They all tracked --
2 both of them tracked their waste at one time, and
3 like Cargill, they all abandoned these programs for
4 operational needs, basically that they didn't want
5 to commit the resources, the money from the bottom
6 line to addressing this environmental problem.

7 You also have as evidence of their
8 knowledge the 2004 ad where the defendants
9 admitted -- or all the defendants except Cal-Maine
10 were on this ad, and they admit that poultry is one
11 of the source of the nutrients getting into these
12 waters.

13 What has happened here is not a mistake.
14 It's not an accident. The fact that these waters
15 turned from crystal clear to the green,
16 algae-covered waters that they are is a result of
17 deliberate actions of the defendants. They knew
18 better, but they did it anyway.

19 Their response has been, of course, first
20 to just ignore it. And you've heard plenty of
21 claims of ignorance in this court. Perhaps the two
22 that stand out the most is when Ron Duncan and
23 Mr. Elrod flew over the watershed, and Mr. Duncan
24 reports that he never saw a poultry house and they
25 didn't show a poultry house, even though they

1 supposedly were looking at sources for pollution.

2 There was also Dr. Sullivan, who couldn't
3 admit that the green water in his pictures was green
4 until finally after a number of uncomfortable
5 moments, I think that he decided that he had to do
6 it.

7 But after the ignoring doesn't work, they
8 then turn and they start blaming people. They blame
9 their growers. It's the grower's job to do it.
10 They blame the cattle, even while they are telling
11 us that the cattle, in fact, create additional
12 pathways.

13 They blame the wastewater treatment plants,
14 even though those have been addressed and have
15 reduced their loadings. They blame septic tanks and
16 urban roads without ever calculating that these have
17 no significance compared -- I said urban -- rural
18 roads, even though these clearly have no impact
19 compared to their great number.

20 Tyson said it, though, that the number one
21 concern -- and this is Preston Keller -- number one
22 concern is not the environment, it's make a positive
23 image, public perception is very important. And
24 what they do is give us ads to say that they will do
25 their part and -- while they do nothing and continue

1 business as usual.

2 I've just about completed my time, but I
3 want to very quickly address paragraph 508 of the
4 defendants' proposed findings where they say that
5 "With respect to the balance of hardships, the
6 injury to the waters of the IRW largely is an
7 aesthetic injury. There is no substantial threat to
8 human health, drinking water, recreational use or
9 wildlife. By contrast, an order prohibiting the use
10 of litter as a fertilizer would impose substantial
11 cost upon defendants, could financially
12 devastate --" and they put in quotes, I don't know
13 where from -- "many growers and ranchers and would
14 have a damaging impact on the cattle industry and
15 economy of the IRW."

16 As for the issue of the other injuries,
17 Mr. Page will address that. We heartily reject
18 that.

19 As to the idea that it will be devastating
20 injury to the growers and cattle industry, in light
21 of the fact that people throughout this state buy
22 commercial fertilizer to raise their cattle, that
23 clearly is a much exaggerated claim.

24 As for their own injuries, frankly, they
25 did little or nothing to address that. But what I

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1 want to address is the idea, the fundamental belief
2 that someone can destroy the beauty of this river
3 valley and say, "but I needed to do it to make
4 money."

5 Judge, I'm all in favor of making money. I
6 wish there was a way to make some in this case, but
7 I will tell you that it is never an excuse that I
8 can destroy the beauty of this country to make a
9 buck. We are not that poor. We are not that
10 impoverished that we will give up the beauty of this
11 landscape in the pursuit of another man's profits.
12 Thank you.

13 THE COURT: Mr. Bullock, a couple of quick
14 questions.

15 MR. BULLOCK: Sure.

16 THE COURT: Let's assume for the purpose of
17 my question causation and liability. Wrestling with
18 this statute that's been on the books in Oklahoma
19 since 1911, 50 OS Section 4, first of all, assuming
20 that that causes the common law nuisance claim to
21 fall out, I take it your position would be trespass
22 would be enough to reach the conduct of the
23 defendants?

24 MR. BULLOCK: Absolutely trespass stands on
25 its own. I don't agree with the premise of the

1 question.

2 THE COURT: I understand. I understand.
3 But trying to wrestle with these legal issues here.

4 Now, if, in fact, as a legal matter, 50 OS
5 Section 4 precludes the state common law nuisance
6 claim, how does it pertain -- I don't know that
7 either side has addressed this legal issue. How
8 does it touch or affect the federal common law
9 nuisance claim?

10 I know the gravamen of the defendants'
11 position is that federal common law nuisance is out
12 because it has been displaced by federal statutory
13 law.

14 But let's assume also for the purpose of my
15 question that federal common law nuisance is not
16 displaced. How does the state statute 50 OS
17 Section 4 apply, if at all, to the federal common
18 law nuisance claim?

19 MR. BULLOCK: I don't believe that it can
20 at all; otherwise, what you would have is a complete
21 reversal of the constitutional scheme where federal
22 law always takes the dominant role in terms of
23 prevailing law.

24 But further, defendants have made it very
25 clear that Oklahoma statutes can't have an

1 extraterritorial effect. And so even if you could
2 have -- you could turn the concept of federal law on
3 its head and say that state law could prevail over
4 it, then you'd still have the extraterritorial
5 effect. But, in fact, I don't believe that that can
6 happen.

7 THE COURT: But here, of course, you have
8 the twist that the State is the plaintiff here, and
9 you'd have a perverse twist where, arguably, 50 OS 4
10 precludes the state nuisance claim, but may not
11 preclude the federal common law nuisance claim. In
12 other words, the idea being that if Oklahoma
13 regulates and allows through its regulation the land
14 application of poultry litter under certain
15 limitations and parameters and, therefore, the state
16 common law nuisance claim falls out, your position
17 would be the federal common law nuisance claim may
18 still apply.

19 MR. BULLOCK: Absolutely. And, again, I
20 strongly challenge the premise, particularly when
21 you look at the issue of the poultry laws. All of
22 those are set up to protect the water. Now, they
23 may have failed in doing that, but they're not --
24 they clearly do not claim to displace the common
25 law. And the common law remedy -- or the common law

1 claim of nuisance would still survive those
2 statutes.

3 The legislature can't pass a law to
4 determine what the science is. And that is -- so
5 the legislature says, do these things to keep the
6 water clean. That's not going to make the water
7 clean. They can't declare that the water is clean.
8 And if they don't give a permit, such as you do
9 under the Clean Water Act, then the common law is
10 going to prevail.

11 And as for the concept of the right to farm
12 or the prior uses, the evidence in this record is
13 quite clear that the recreation and the use of this
14 water for drinking water and the beauty of this
15 water itself is a use which far predates the first
16 time that someone tried to grow a chicken in this
17 watershed, much less these defendants' operations.

18 So the concept that this could be protected
19 because of the poultry -- that poultry growing is
20 some type of a protected pursuit belies the previous
21 uses for this water.

22 THE COURT: Thank you for helping me
23 wrestle with those.

24 Mr. Page.

25 MR. PAGE: Good morning, Your Honor.

1 THE COURT: Good morning.

2 MR. PAGE: If it please the court, my name
3 is David Page, and this morning I will be briefly
4 addressing some of the scientific issues that are
5 involved in this case. And in particular,
6 Your Honor, I've been asked to discuss with you this
7 morning the issues of causation and injury as that
8 evidence has been presented to you during the trial
9 of this case.

10 THE COURT: Is there enough here to prove
11 causation even if the court were to reject the Engel
12 routing model?

13 MR. PAGE: Yes, sir. And I will go through
14 many duplicate and confirmatory proofs that
15 demonstrate that, sir.

16 THE COURT: All right.

17 MR. PAGE: Then also I will talk about the
18 causation and injury evidence. And, Your Honor, I
19 would like to also point out to you this morning
20 that there are many areas of causation, including
21 this issue you just asked me, that are really not in
22 dispute based on the admissions of the scientists
23 presented by the defendants in this case.

24 Now, Your Honor, I've put together a brief
25 overview of what I believe how the evidence of

1 causation and injury work together. This schematic
2 is kind of the way I believe it works.

3 And so the first issue is waste management
4 or land application of poultry waste. That's
5 undisputed. So that part, which would be the first
6 aspect of the causation pathway, that is that the
7 waste is released into the environment, it's put in
8 a place where it can move into the waters of the
9 IRW, is undisputed in this case.

10 A lot of dispute, at least initially, began
11 with the runoff and infiltration. And I'll spend a
12 lot of my time talking to you about the evidence
13 presented by the State, the concessions by the
14 defendants, and then the credibility or
15 persuasiveness of each side's evidence of runoff and
16 infiltration.

17 If you move to your right, Your Honor, and
18 follow that orange arrow, you see the water
19 impacts. And the water impacts that are important
20 for the court to consider is have phosphorus
21 concentrations in loading in the IRW increased.

22 Again, Your Honor, the evidence of this
23 record I believe is undisputed, that the natural
24 background levels are no longer present, that
25 there's much more phosphorus entering the lake today

1 than there was 50 years ago. So, again, that factor
2 of the causation chain and pathway is undisputed.

3 Oddly enough, Your Honor, much of the rest
4 of the evidence is wholly undisputed by the
5 defendants in this case. But let me briefly go over
6 through it.

7 The next question is what happens when you
8 add the nutrients and the phosphorus to the waters.

9 It's undisputed that it increases
10 productivity, that phosphorus in particular in this
11 watershed is the important limiting nutrient to
12 cause eutrophication or increased productivity.

13 What does that mean as a practical matter?
14 Four things. Increased algae, and in particular
15 increased suspended algae, that is the stuff that
16 floats in the water and makes it green; increased
17 attached algae, that is the cladophora, the
18 filamentous green algae that you've heard testimony
19 about; and in particular, increased blue-green algae
20 which are now pervasive in the lake. Again, there's
21 been no dispute --

22 THE COURT: I take it that benthic is
23 attached?

24 MR. PAGE: Yes, the bottom benthic. What
25 we have here is, again, there's been no dispute that

1 this phosphorus has caused these results in this
2 watershed.

3 Now, what -- how do those injuries look?
4 What kind of injuries result? I think there's a
5 little bit of dispute about the fish makeup in the
6 streams. But basically, again, the injury evidence
7 has been undisputed in this case.

8 That is, there's been habitat changes,
9 aesthetics changes. In fact, the defendants
10 actually concede that in one of their findings of
11 fact and conclusions of law, that there's
12 disinfection byproducts produced in this watershed.
13 That there are toxins that are potentially and have
14 been produced in this watershed from the blue-green
15 algae, and that all of these result in water
16 quality standard violations which are prima facie
17 evidence of injuries.

18 So when we go to each of these separate
19 ones along the bottom here, Your Honor, we have the
20 specific evidence of each of these injuries that's
21 been presented to you. Again, I'll point out where
22 there has been some change but mostly has been
23 wholly undisputed.

24 Now, let's first talk about causation. And
25 I'd like to talk about it in two major areas, let's

1 say. First I want to point out to the court the
2 concessions, the admissions made by the defendants'
3 experts, then I would like to talk about our
4 evidence.

5 First Dr. Connolly. Now, Dr. Connolly was
6 the first expert that the defendants called in this
7 case. In fact, I believe he's referred to as their
8 most important expert by some of counsel for
9 defendants.

10 He had many significant admissions, many of
11 which relate to this causal pathway. For example,
12 admitted on cross-examination that phosphorus does
13 actually run off from the fields in this watershed
14 and enter the streams of the IRW.

15 Amazingly, we spent weeks arguing and
16 objections, many, many objections, my career's worth
17 of objections in weeks of testimony where the
18 defendants tried to prevent that type of evidence.
19 And their first witness on cross-examination admits
20 it would be pretty silly to deny that phosphorus
21 does not run off the fields and get into the IRW and
22 streams and rivers.

23 He also conceded -- just to make sure, I
24 asked him in another way, is there evidence of this
25 pathway. He said, "The answer is obviously yes."

1 That there is evidence of a pathway from manures
2 applied to the lands in the IRW, to the IRW, the
3 Illinois River in particular, and to Lake
4 Tenkiller. "The answer is obviously yes." That's a
5 quote from the record from Dr. Connolly.

6 Again, why would he have to admit this?
7 Well, his own -- limited, but his own investigation
8 showed that nonpoint source phosphorus was 82
9 percent of the phosphorus entering this system.
10 Obviously if it's not point source, it's nonpoint
11 source. And nonpoint source, by definition, is, in
12 fact, runoff phosphorus. So when his records, his
13 own evaluation, showed that it was 82 percent, he
14 had to admit that the pathways exist; otherwise, he
15 would be ignoring the obvious.

16 He also admitted with regard to the type of
17 phosphorus that's involved in this case on
18 examination, cross-examination:

19 "The vast majority of runoff events as you
20 classified them" -- referring to Dr. Connolly's
21 analysis -- "in '94 to 2003 have more dissolved
22 phosphorus than particulate phosphorus?"

23 "That's correct."

24 So again he concedes as an engineer that
25 the -- not only does -- is there a substantial

1 portion of runoff from phosphorus from fields
2 getting into the streams and the river and the lake,
3 but it's also dissolved phosphorus. That is a vast
4 majority, by his own evidence.

5 So that's the predicate. That's the
6 predicate upon which our evidence then sits. And
7 frankly, Your Honor, I believe he's conceded the
8 causal pathway. And this is their lead witness
9 who's conceded it.

10 So with that foundation, what additional
11 evidence does the court have to show the causal
12 pathway; that is, that poultry waste is a
13 significant contributor to phosphorus in the IRW?

14 First, the State presented a nonretained
15 expert, I think a very important and very credible
16 expert for the court to consider his testimony,
17 that's Dr. Indrajeet Chaubey. He wasn't retained.
18 And before taking a position at Purdue University,
19 he worked for years in the IRW at the University of
20 Arkansas studying these exact issues of fate and
21 transport of poultry waste in the IRW.

22 He pointed out in his testimony that there
23 are many different ways to evaluate fate and
24 transport. There isn't a single method,
25 Your Honor. There are many different ways you can

1 prove fate and transport or causation in a pollution
2 case such as this.

3 What is important to note is that the four
4 key ways that he mentioned in his testimony, waste
5 and land management, land use, mathematical
6 relationships or the regressions of XY plots, and
7 mathematical modeling were all employed individually
8 and separately by the State in this case. So any
9 one of them would be evidence of causation and
10 pathway, but the State employed, I think, a
11 belt-and-suspenders, and maybe
12 two-belts-and-suspenders approach, employed all of
13 the analysis to see if they would be -- redundantly
14 show the same thing.

15 So let's look at the first one: Waste and
16 land management. Looking at an environmental case,
17 the first question that always comes out is how much
18 waste from whom. That is always a critical question
19 to evaluate who's responsible for the waste, because
20 courts and scientists agree that it's a significant
21 aspect of proving who's responsible.

22 Here the evidence is undisputed basically
23 that the defendants produce at least 354,000 tons of
24 poultry waste each year in the IRW, and that each
25 defendant has specifically themselves generated

1 substantial amount of waste, and that it contains a
2 large amount of phosphorus. In fact, it contains
3 between 8.7 and 10 million pounds of phosphorus
4 annually.

5 Now, Your Honor, if there's a million acres
6 in the IRW and there's about 10 million pounds each
7 year of phosphorus coming from poultry and about 40
8 percent of the pastures is pasture for land
9 application, that means that about 20 pounds per
10 acre each year from phosphorus from poultry could be
11 applied to these fields. That's just basic
12 mathematics and analysis. So, Your Honor, we have a
13 substantial fraction of poultry phosphorus that's
14 being generated as waste in this watershed.

15 Now, why is that important? Because the
16 way it's managed. Clearly, here we have all the
17 proof that Judge Holmes needed for finding causation
18 in the *Herd* case. He said there's a lot of chat, a
19 lot of mining waste produced nearby and placed
20 nearby the community where the contamination
21 resulted.

22 And he also found that the contaminant of
23 concern, lead, was in the mining waste and was
24 elevated in the property and the children of
25 Picher. He said, that enough, recognizing that

1 there was a potential aerial pathway, was to find
2 causation to get past summary judgment in that
3 case.

4 Here the evidence is undisputed. We have a
5 substantial amount of waste that contains the
6 contaminant of concern, phosphorus. It is placed in
7 and around the community of concern, the streams and
8 lake of the IRW. And those streams and lake have
9 and demonstrate increased phosphorus. That,
10 Your Honor, I contend is sufficient to pass Judge
11 Holmes' test in *Herd* and is sufficient for this
12 court to find causation by itself in this case.

13 Now, we have more than that, but I believe
14 that's sufficient for causal -- to raise a question
15 of causation in this case.

16 Now, Your Honor, we also have evidence that
17 shows that the phosphorus from the poultry waste has
18 increased the STP of the lands and that with
19 increased STP, this gift, the phosphorus waste from
20 poultry, is a gift that keeps on giving. That is,
21 as STP levels rise, they continue to produce runoff
22 with increased phosphorus over time.

23 THE COURT: Back up just a second. Of
24 course, in *Herd* as you implicitly acknowledge, that
25 was a summary judgment ruling, and Judge Holmes

1 merely held that there was sufficient facts in the
2 record to preclude summary judgment for the
3 defendants. And obviously we're we'll beyond that
4 here. This is trial. This is -- where you have to
5 prove it, not to simply raise the genuine issue of
6 material fact.

7 MR. PAGE: I understand that, Your Honor,
8 and I appreciate that procedural difference in the
9 context where we are. But I guess my point here is
10 that Judge Holmes said that was evidence of the
11 causation. I think that shows that that much
12 evidence in and of itself is part of what goes on
13 the scale. And clearly there needs to be the scale,
14 the weighing, then, of whether there's a
15 preponderance of evidence. But that clearly is
16 added to the scale.

17 Now, Your Honor, another key aspect of
18 evidence in this case that was presented was the
19 mass balance analysis that Mr. Bullock has already
20 discussed with the court briefly that Dr. Engel
21 prepared.

22 That is an important aspect of evidence,
23 and that may be the single most probative evidence
24 of who are the significant contributors in this
25 case. That evidence shows that the overwhelming --

1 three-quarters of the phosphorus that enters into
2 the watershed today and basically since about 1969
3 has been from poultry waste.

4 Now, why is that important? Dr. Chaubey
5 said that this is an important area of determining
6 water quality impact; that is, the causal pathway.

7 In fact, Dr. Chaubey, when he was with the
8 Arkansas Water Resources Center, they undertook a
9 similar mass balance analysis. Your Honor, if that
10 wasn't probative evidence of the causal pathway,
11 part of the evidence that would be added to the
12 scales of justice, so to speak, then the Arkansas
13 Water Resources Center wouldn't be looking at
14 similar analysis.

15 And their analysis came to the similar
16 conclusion. That is, that poultry growers were the
17 most significant contributor of phosphorus loading
18 in the IRW. That's phosphorus loading, Your Honor.
19 "Loading" is the term of art that's often used with
20 delivery to the waters.

21 Now, how is this evidence to be viewed by
22 the court? Well, given that it's substantially
23 similar to an independent researcher, it should be
24 given great, I believe, deference and persuasive
25 value.

1 THE COURT: Refresh my recollection. Here
2 the context of phosphorus loading was bringing
3 thousands of tons of potash and phosphorus into the
4 watershed, not specifically loading of the water,
5 correct?

6 MR. PAGE: The mass balance looks at
7 phosphorus that's being brought into the watershed.

8 THE COURT: Into the watershed.

9 MR. PAGE: Into the watershed.

10 THE COURT: But so phosphorus loading used
11 in this context on your screen 61 is talking about a
12 mass balance analysis.

13 MR. PAGE: Yes, sir.

14 THE COURT: All right.

15 MR. PAGE: Yes. But the reason I want to
16 point out the point about phosphorus loading,
17 Your Honor, is that the scientists, given the fact
18 that this phosphorus isn't put in some kind of a
19 Subtitle C landfill that has triple lining and is
20 covered --

21 THE COURT: I understand. But you inferred
22 that -- or implied, rather, that the phosphorus
23 loading, the term used here was in terms of loading
24 to the water. And as I recall Dr. Chaubey's
25 testimony, he's talking about loading in a mass

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1 balance type of context.

2 MR. PAGE: Yes.

3 THE COURT: Bringing it into the watershed.

4 MR. PAGE: Yes, Your Honor.

5 THE COURT: Okay. Go ahead.

6 MR. PAGE: That's exactly what they found,
7 because the logic is obvious that that has an
8 influence, a substantial influence on what goes into
9 the water if it's managed in the way that we have
10 here. That is, human waste and poultry waste and
11 other livestock waste are all allowed to be released
12 into the environment. That is, phosphorus waste.
13 They're all either land-applied or directly
14 discharged into the rivers and streams.

15 That is why that even though the direct
16 discharge may be a quicker path, eventually in this
17 IRW context, if you allow this waste to be spread
18 out on the fields, it eventually runs off into the
19 streams and makes its way into Lake Tenkiller.

20 The defendants, even though they point to a
21 lot of different potential sources, didn't quantify
22 any of them in any fashion.

23 This is an essential quantification step
24 that was done initially by Dr. Engel to predicate
25 how he would put together his model, his computer

1 model. So this lays the foundation for determining
2 what sources are essential, which ones are the ones
3 that are necessarily important to computer model,
4 and to focus your analysis on.

5 So it was an important predicate step for
6 the computer model, but it's also an important piece
7 of evidence that demonstrates the phosphorus
8 contributions by different contributors in the IRW.

9 Now, Dr. Sullivan and Dr. Connolly tried to
10 minimize the importance of the mass balance to the
11 relationship of it getting not just in the
12 watershed, as the court pointed out, but getting in
13 the water. And they analyzed it through a --
14 analogized it to a warehouse or a bank.

15 If that was the case, it would make a
16 difference. But it's not. That's what is important
17 here, Your Honor. The fact is that ignores
18 reality. And clearly, Dr. Chaubey and others,
19 researchers, wouldn't look at mass balance as being
20 probative to water quality if they didn't believe
21 that had an impact on their waters.

22 THE COURT: Obviously this record is full
23 of evidence of the tendency of certain soils to
24 "bank" phosphorus. But, obviously, you don't have a
25 secure bank.

1 MR. PAGE: No, sir. There's a potential of
2 absorption and adsorption. Dr. Olsen talked about
3 the differences of those. As a geochemist, he's
4 imminently qualified to. And although there may be
5 some temporary banking, there's always this question
6 of equilibrium. And there's no phosphorus in
7 rainfall, Your Honor. It's not like nitrogen. So
8 when that clear -- phosphorus-clear water hits that
9 phosphorus soils, there will be some dilution going
10 into the water.

11 THE COURT: I don't believe there's
12 anything on this record to indicate the phosphorus
13 content of rainfall. Is there?

14 MR. PAGE: I may be mistaken. We may not
15 have addressed that, Your Honor.

16 THE COURT: I don't believe so.

17 MR. PAGE: But I believe the record does
18 indicate that there's always some transference from
19 the soils to rain waters.

20 THE COURT: There's certainly testimony
21 with regard to phosphorus runoff in periods of heavy
22 rainfall. Go ahead.

23 MR. PAGE: And that there's -- Your Honor,
24 I think there's also testimony that's undisputed in
25 this record that when there is higher STP, that

1 would indicate more banked phosphorus, there is also
2 higher runoff from those fields where there's higher
3 STP. So that indicates there's that transference of
4 the phosphorus into the waters that's banked. So
5 like the court pointed out, it's not very secure.
6 The next rainfall will release a portion of it; not
7 all of it, but a portion of it.

8 I believe, Your Honor, that Dr. Engel's
9 testimony concerning the five percent, that is five
10 percent of the phosphorus that's applied each year,
11 that is the 8.7 to 10 million pounds, has been shown
12 through another mass balance analysis through
13 looking at what is put in through nonpoint source
14 versus point source ends up in the waters each year.

15 That testimony has been undisputed. In
16 fact, it's corroborated by the testimony of
17 Dr. Edwards. And his analysis was that anywhere
18 between 2.2 and 7 percent -- let me get on the right
19 slide here. Excuse me, Your Honor.

20 There it is. 2.2 and 7.3 percent of the
21 phosphorus applied each year is lost in runoff.
22 Again, another causal evidence that's a little bit
23 closer to the mass balance getting actually in the
24 waters, because there they look at the mass balance
25 coming into the watershed and then they look at the

1 balance of phosphorus in the waters, and they
2 predict the contributions based on that.

3 Now, Your Honor, as a predicate for the
4 assumption that the mass balance analysis are
5 appropriate causal pathways, Dr. Fisher, the only
6 geologist, I believe, that testified in this case
7 and has substantial background in geochemistry and
8 has been a professor of geology at the University of
9 Tulsa and is currently teaching also, he says that
10 the topography, hydrology and geology in soils are
11 very important. And they're clearly important in
12 this case.

13 I know the court is very aware of this
14 evidence. I'm not going to spend a whole lot of
15 time on this. I think the court is a student of
16 science in this area.

17 But there clearly is runoff throughout the
18 IRW. There hasn't been any testimony offered by the
19 defendants contrary to what Dr. Fisher pointed out
20 that, even flat land, there will be runoff with
21 sufficient rainfall and that there's no area within
22 the IRW, given sufficient rainfall, where there
23 wouldn't be runoff.

24 Now, that whole question of the geology as
25 being important to this case is confirmed by three

1 different witnesses: Dr. Fisher, who we just talked
2 about; Dr. Olsen; and Dr. Edwards, who testified
3 that, given the geology, that the potential for
4 water quality for degradation is particularly high
5 where shallow, cherty soils and karstic geology
6 greatly increase interaction between surface and
7 groundwater.

8 I believe the court has probably seen, and
9 there's been testimony that the streams will come
10 and go in this watershed; not because they dry up,
11 because they move into the groundwater and then come
12 back out. There's been lots of testimony in this
13 case about the alluvium. After runoff, the alluvium
14 fills up on the sides of streams and rivers, and
15 then as the water level drops, the alluvium
16 contributes to the waters.

17 So even during base flow, Your Honor, the
18 groundwater and the alluvium of this watershed
19 contribute water that is phosphorus laden. This is
20 important. It was important to Dr. Engel in
21 choosing that he didn't want to use a mechanistic
22 model.

23 The court may recall that the mechanistic
24 routing model, he felt, would not be effective
25 because of this interaction between surface and

1 groundwaters. And he found that Dr. -- the doctors
2 from Oklahoma State University who had tried to use
3 a mechanistic routing model in this watershed was
4 unable to do so primarily because of the interaction
5 between groundwater and surface water.

6 So those interactions, that addition of
7 phosphorus and loss of phosphorus at different
8 points along the streams, would be problematic for
9 the mechanistic model.

10 Now, Your Honor, it's important to point
11 out just in summary on the geology, there has been
12 no contest in this case about the propensity for
13 runoff and for groundwater infiltration of
14 land-applied phosphorus due to the geology and
15 topography in this case. That, I believe,
16 Your Honor, has not been disputed.

17 Now, the next piece of evidence and wholly
18 independent line of evidence of causation is
19 watershed modeling. Again, Dr. Chaubey pointed out
20 that it's another way that one may determine the
21 fate and transport of a pollutant is through
22 watershed modeling. Again, we employed that in this
23 case. Dr. Engel employed that, Your Honor, in this
24 case.

25 Dr. Engel used a computerized model, that

1 is the GLEAMS model, and linked it with the
2 mechanistic routing model in this case. He did so.
3 That his testimony was that he has used that same
4 process in other watersheds and that others have
5 linked models of this type. In fact, SWAT models
6 and other models often use these type of linked
7 models to do an evaluation of a watershed.

8 The results are important to look at its
9 accuracy or its -- the strength of the results. The
10 results are undisputed that the phosphorus for
11 nonpoint source was about 60 percent before 2003,
12 and Dr. Engel's model predicted it was 80 percent
13 after 2003. This result, this 80 percent, this
14 model prediction result, is consistent not only with
15 USGS prediction, which I believe validates the
16 model, that is the linked model, but also is
17 consistent with Dr. Connolly's conclusion as to
18 nonpoint source.

19 Now, let's talk about the critiques. First
20 I want to point out the experience, Your Honor. And
21 I believe that we did do an unsuccessful challenge
22 of *Daubert* on Dr. Bierman in this case, but I think
23 the criticisms raised in that are still important.

24 Dr. Bierman has nowhere near the experience
25 in watershed modeling as Dr. Engel, and that

1 underlies his criticisms and pervades the probity
2 and the value of his criticisms.

3 On the other hand, Dr. Engel was, in fact,
4 selected by Judge Eagan as a neutral special master
5 in the *City of Tulsa* case on these very issues.

6 THE COURT: And yet she rejected his
7 opinions, correct?

8 MR. PAGE: I don't recall that,
9 Your Honor. I recall that he gave an opinion as to
10 Dr. -- the SWAT model that was offered by the
11 Oklahoma State -- but that he didn't actually -- I
12 don't believe she rejected any of his opinions, Your
13 Honor.

14 THE COURT: All right.

15 MR. PAGE: He didn't offer a model in that
16 case. He was critiquing the model that was offered
17 by the City of Tulsa in that case. I believe she
18 actually adopted his analysis.

19 And, Your Honor, his testimony in this case
20 was that the lessons he learned from his evaluation
21 in Eucha-Spavinaw and the modeling work there played
22 an important -- played an important role in how he
23 selected the modeling in this case.

24 But more than that, Your Honor, Dr. Engel
25 has published and is recognized both by Purdue

1 University and his own society of engineers as being
2 an outstanding researcher for the last 20 years.

3 Now, they complain that GLEAMS was not a
4 watershed model. Your Honor, GLEAMS is used as a
5 watershed model in all of the -- most of the
6 watershed models such as SWAT and HAAFA that are
7 used throughout other places.

8 So GLEAMS -- the portion that evaluates
9 what is happening on the fields, that is how much is
10 running off to the edge of the field, is used by
11 GLEAMS, has been used by GLEAMS, and that has been
12 published.

13 What about the empirical versus the
14 mechanistic model? Dr. Engel's testimony -- and I
15 don't believe it was contested -- that a mechanistic
16 model uses equations also. But rather than one
17 equation, which we'll describe at least implicitly
18 what happens with the phosphorus in the water, the
19 amount of water in the phosphorus that goes from the
20 edge of field to Lake Tenkiller, a mechanistic model
21 would add multiple equations. Those equations would
22 be based on observations of phosphorus in water from
23 other watersheds, and they would be adjusted based
24 on calibrations.

25 Dr. Engel's testimony was that he was

1 concerned about the relative loadings to Lake
2 Tenkiller. That was what was important to him in
3 this analysis. So the understanding of the
4 specifics of how phosphorus may be delayed along the
5 way were not important.

6 Now, why does that make sense?
7 Fundamentally and primarily this makes it make
8 sense: One is geological and one is chemical. From
9 a geological point of view, this watershed leaks.
10 The water runs off and it runs through. There is
11 movement of water. This isn't like a desert
12 watershed where water isn't moving downhill to the
13 lake.

14 Second of all, chemical. Phosphorus is
15 conserved, or it remains in the environment. It
16 doesn't volatilize. It may change forms along the
17 way. It may be taken up into fish or plants. But
18 you don't remove phosphorus from this system unless
19 you catch a fish or harvest some algae and take it
20 out of the watershed. The phosphorus stays in this
21 system.

22 Given that, understanding of how much
23 phosphorus at any one time is in algae on the bottom
24 of the river or suspended in the river itself was
25 not important to understanding the impacts on Lake

1 Tenkiller.

2 We have evidence all along the way that the
3 phosphorus persists and is there based on the
4 sampling data and on the presence of algae and
5 changes in water quality. So those were important
6 considerations for Dr. Engel in choosing this
7 empirical model.

8 It's important to understand, Your Honor,
9 that at least in my experience, where you have the
10 empirical evidence, it's more persuasive than
11 predicted evidence from a model. The mechanistic
12 can only take other empirical observations,
13 transform them into a mathematical equation and try
14 to make a prediction.

15 Here there is not a prediction. It's known
16 how much phosphorus is getting into Lake Tenkiller.
17 Dr. Engel knows how much phosphorus is being
18 released by the wastewater treatment plants, and he
19 allocates the rest of it to different nonpoint
20 sources. He gives the wastewater treatment plant
21 phosphorus a bye all the way to the lake. It's the
22 rest of the phosphorus that's being put on the
23 fields that is being delayed in his model, in GLEAMS
24 and the routing model.

25 Your Honor, there was also some criticisms

1 of land use, the NLCD data. I believe it was
2 undisputed that's used by others, that Dr. Engel did
3 not make those decisions, those are made by USGS,
4 and that there was no evaluation by Dr. Bierman as
5 to whether those criticisms had any impact.

6 The same with his criticism with regard to
7 urban area inputs into GLEAMS. Again, there was no
8 evaluation by Dr. Bierman as to whether or not those
9 changes that Dr. Engel made, which he conceded could
10 be done with the GLEAMS model, had any impact.

11 Now, Dr. Bierman, I think rather
12 flippantly, says I don't have to do a model, that's
13 his job. But he had the model. He claims he's an
14 expert in it. Why didn't he input the different
15 land use patterns and the different urban area
16 inputs he claims are wrong in Dr. Engel's model and
17 show us that there was made a difference.

18 I suggest that the lack of using the model
19 to test it indicates that his evidence, his
20 so-called evidence of lack of reliability on these
21 points are not persuasive because he could have
22 tested it and offered this evidence, and he did
23 not. He did not test whether the land use data and
24 the inputs for urban use made any difference in the
25 results.

1 Now, I need to hurry -- keep hurrying along
2 here. And I apologize I'm talking fast, but they
3 have limited my time here, and I can see I need to
4 move ahead.

5 The next piece of evidence has to do with
6 mathematical relationships. And again, Dr. Chaubey
7 again gives us an independent predicate for this.
8 These are these regression analyses that we see a
9 lot of. And he actually refers to those as giving
10 evidence of a cause and effect relationship.
11 Because, again, scientists use common sense that
12 indicates that what you do around an area of land
13 use will affect the water in that area because rain
14 comes down, causes things in the land to infiltrate
15 and run off.

16 So, did the State do this type of
17 analysis? Yes. Two different scientists for the
18 state independently did a regression mathematical
19 analysis evaluating land use with water quality
20 impacts.

21 Dr. Engel did that, and he found -- his
22 conclusion was as we increase poultry house density,
23 we see corresponding increases in phosphorus from
24 those watersheds.

25 Now, he simply just didn't say, well, count

1 the number of poultry houses and, therefore, I can
2 see what happens in the water quality. He had as a
3 fundamental basis for that his evaluation along with
4 Dr. Fisher of what happens to waste in those poultry
5 houses, and that most of it, 80 percent, is land
6 applied within four miles -- five miles of the
7 poultry house in which it's generated.

8 So there was an undisputed factual
9 predicate upon which he could count poultry houses
10 to see if those land use activities would have an
11 impact on water quality.

12 He showed a very strong regression there,
13 Your Honor, which Dr. Chaubey says is evidence of
14 cause and effect.

15 Dr. Stevenson did an independent analysis.
16 He also, independently from Dr. Engel, did a poultry
17 house density analysis and also reached a scientific
18 conclusion showing evidence of cause and effect of
19 poultry house operations affecting phosphorus.

20 But Dr. Stevenson, as a biologist, went
21 farther than just raising phosphorus. He said there
22 was a correlation between poultry houses and
23 phosphorus in the streams. He said there was a
24 correlation between poultry houses and algal biomass
25 in the streams. He said there's a correlation

1 between nutrients in the streams; that is,
2 phosphorus and algal biomass. And that that algal
3 biomass affected the habitat; that is, the DO and pH
4 of these streams which have an effect on the
5 habitat, which is a water quality injury.

6 He also then said that he could see this
7 causal pathway, that there was an impact on the fish
8 communities based on poultry house density.

9 The only evidence against Dr. Stevenson's
10 analysis is from Mr. Chadwick. And he did no
11 analysis other than evaluated the index of biotic
12 integrity for Oklahoma using the wrong type of data,
13 and he found that there's plenty of different
14 species and lots of individuals in these streams
15 even when there are lots of poultry houses.

16 What he didn't say is that he didn't tell
17 us whether or not the species' composition changed or
18 whether the number of individuals changed.

19 He conceded that those would also be
20 important injuries, but he never did that
21 evaluation. So what he said is there's still ten
22 species, for example, and where there are poultry
23 houses and where there are not poultry houses. He
24 didn't tell us whether the type of species change.
25 Do they go from stone rollers that like to eat the

1 algae off the bottom to maybe a cardinal shiner
2 that's more of a predator fish that likes the clear
3 waters and doesn't like the heavy algal mass.

4 Those, according to Dr. Stevenson, are also
5 evidences of injury. So it's not just the number of
6 species. That's what the index of biotic integrity
7 looks at. It's a very blunt instrument evaluation
8 of biotic integrity. You also have to look at
9 whether the species composition changed and also the
10 numbers of individuals.

11 Now we have hundreds of stonerollers, algae
12 eaters and very few cardinal shiners, even though we
13 have both species. Again, we show a community
14 injury.

15 Let me briefly go -- I am kind of jumping
16 ahead to the injury evidence, Your Honor, but
17 sometimes they kind of flow, I guess, naturally.
18 And I apologize for that.

19 But Dr. Olsen actually gave us several
20 different types of evidence of causation. Here is
21 the upstream/downstream. We have evidence in this
22 case that was undisputed that we had a field where
23 there was poultry land application, and we had two
24 rainfall events where sampling was taken upstream
25 from where the runoff from that field went into a

1 creek. So you have a field, a creek running by the
2 field, the field runs off into the creek. Before
3 that field runs off, there's a sampling event
4 twice.

5 Downstream contemporaneous with that runoff
6 and the upstream sampling, there's a sampling
7 machine taking samples. The upstream samples were
8 close to background, 20 micrograms or the .02
9 milligrams per liter. Downstream, depending on the
10 rainfall event, there are two of them, it was 470.
11 That clearly demonstrates runoff because in this
12 particular instance, we evaluated other potential
13 sources, and there were no other potential sources
14 on this field other than poultry waste land
15 application that would raise it from the 20
16 background to 470.

17 Now, how many times do we have to do this
18 to prove the point? Your Honor, I think it's
19 reasonable you do it once, maybe twice, and it shows
20 runoff along with all the other evidence.

21 But Dr. Olsen and Dr. Fisher also did
22 another type of causation evidence, and that relates
23 to the composition of the chemicals.

24 And, Your Honor, I'm not going to spend a
25 lot of time on this today, but I will point -- this

1 is all in our findings of fact and our records.
2 But, Your Honor, in addition to just looking at
3 phosphorus, if you have a unique waste that has
4 unique chemicals in it in concentrations that are
5 unique from other waste sources that you're
6 concerned with, that is other principal sources of
7 phosphorus, then you can use those other chemicals
8 to evaluate whether or not the phosphorus that
9 you're finding in increased concentrations are from
10 the source you're concerned with.

11 Here both Dr. Fisher and Dr. Olsen found
12 that poultry waste had unique contributions of
13 copper, zinc, arsenic and potassium. Dr. Fisher
14 focused on arsenic, zinc and copper. He found those
15 compositional arrangements or combinations in the
16 solid media all the way down to causal pathway, and
17 he also found it in Lake Tenkiller sediments. And
18 he found that those constituents, along with
19 phosphorus, increased as time passed based on his
20 lead-210 analysis.

21 So not only do we have increased
22 phosphorus, but we have also unique chemicals from a
23 unique source -- excuse me, unique chemicals that
24 are not found from another source, substantial
25 source in this watershed that are also rising along

1 with phosphorus.

2 I'm going to skip ahead to Dr. Olsen, who
3 also did a similar analysis with the chemicals. And
4 here's two independent scientists determining causal
5 pathway, independent analysis, they didn't rely on
6 each other's analysis, and used a similar
7 methodology; that is, we're going to look again at
8 the combination of chemicals in poultry waste. Look
9 at the other principal potential contributors of
10 phosphorus to the system, here wastewater treatment
11 plant and cattle, and is there something unique.
12 And again, Dr. Olsen found it to be unique.

13 Your Honor, I'm going to maybe just briefly
14 make one quick comment on this. There's a lot of
15 slides, and perhaps the court maybe would like to
16 read them later, but I think this is what's
17 important to take away from this. Dr. Olsen is a
18 Ph.D. geochemist. He taught it at Colorado School
19 of Mines. He's practiced it for 30 years. He's the
20 only geochemist that's appeared in this courtroom.
21 Geochemistry is fate and transport. Geochemistry
22 studies the geology and how chemicals move within
23 geological constructs.

24 He evaluated these chemicals. He gave you
25 the opinion that these chemicals indicate -- even

1 though they have somewhat varying different
2 mobilities, he understands those mobilities, he took
3 that into consideration and still testified that
4 they indicate and they show that there is a causal
5 pathway for the phosphorus from the fields to the
6 streams into Lake Tenkiller.

7 He did this two ways, both from the
8 increased contamination you see throughout the
9 watershed and also the gradient, from higher near
10 the point of release to lower at Lake Tenkiller,
11 which would be a logical gradient pathway.

12 Your Honor, given the time, I'm going to
13 skip through these, but I believe that Dr. Olsen and
14 Dr. Fisher's work substantiate each other in that
15 analysis.

16 Your Honor, I think it's important to point
17 out that Dr. Olsen in the causation evidence of our
18 -- in our case is -- and I'm actually on slide 86,
19 Your Honor -- actually is substantiated and
20 corroborated by other independent investigators that
21 were not involved in this case.

22 The state agencies, both Arkansas and
23 Oklahoma -- I guess Oklahoma would have been
24 involved, so I'll take that statement back. At
25 least the Arkansas state agencies have corroborated

1 the causation, USGS and USDA. And the details of
2 that corroborative evidence are set forth in our
3 findings of fact in paragraphs 442 through 448.

4 But interesting, Your Honor, we've got
5 another concession from the defendants when they
6 called Mr. Earl Smith, who's the chief of the water
7 division of the Arkansas Natural Resources
8 Commission. They're the equivalent of our DEQ.
9 Here's the chief of the water, he's the chief guy in
10 the water division as opposed to air or land, and
11 when asked on cross-examination, he conceded, he
12 said certainly one of the significant contributors
13 to nonpoint source impacts affecting the waters of
14 the Illinois River Watershed -- and that is in
15 context of poultry phosphorus. So he said it's
16 clearly significant contributors. Again, a
17 concession of a -- I would consider an expert in
18 this area called by the defendants.

19 The defendants haven't offered any reason
20 why we should discount their own witness and, again,
21 the concessions by Dr. Connolly.

22 So again, the significance of the source,
23 whether it's just a molecule or two, is, I believe,
24 also overwhelmingly supported our evidence here.

25 Arkansas Natural Resource Commission says

1 it's a significant contribution, poultry is. That's
2 Mr. Smith's testimony here in this court. USDA,
3 Geological Survey, Secretary of the Environment in
4 this courtroom, Dr. Engel, Dr. Olsen, and I don't
5 think I neglected to mention Dr. Fisher.

6 Now, I think I would be remiss, Your Honor,
7 if I didn't finish up my causation analysis by a
8 little review of Dr. Connolly's rather astounding,
9 unique, unsubstantiated and -- well, I think its
10 almost absurd opinion about the dominant impacts.

11 Dr. Connolly says that the dominant impact
12 of phosphorus in this watershed is wastewater
13 treatment plant. In fact, the court asked him a
14 question to clarify that. He said it was the
15 dominant impact.

16 Now, the first thing that I thought was
17 kind of interesting is that even though Dr. Connolly
18 says this, the defendants don't believe it. They
19 don't even believe their own expert because they
20 spent a lot of time and effort, both in their
21 findings of fact and with Dr. Sullivan, arguing,
22 well, there's all these other nonpoint sources that
23 are important.

24 Now, if it is true that Dr. Connolly's
25 opinion that the only phosphorus of import in this

1 watershed is wastewater treatment plant, then why
2 did they spend so much time explaining the import of
3 other nonpoint source phosphorus, such as urban
4 runoff, cattle, septic tanks, critters? They spent
5 a lot of time pointing the finger to those. That
6 belies their own belief in their own expert. But
7 there's more than just that.

8 Dr. Connolly's opinion is patently
9 uncredible. He's the only one that's ever said it.
10 He's the only one that ever said it in this
11 watershed. He's the only one that said it in any
12 watershed. I would challenge the defendants to give
13 us any opinion in anyplace in the United States and
14 certainly in the Illinois River Watershed where an
15 expert says that nonpoint source phosphorus is not
16 important to the water quality impacts. They can't
17 do it. It's made up.

18 Now, why is it made up based on the facts,
19 let alone he's just all by himself? First, he says
20 82 percent of the phosphorus load into the lake is
21 nonpoint source. So he's asking the court, if you
22 believe his opinion, to ignore 82 percent of the
23 phosphorus.

24 Now, even if just ten percent of 82 percent
25 of the phosphorus was important, that would be --

1 from nonpoint, that would be half of what the
2 contribution is from wastewater treatment plant. So
3 he's asking the court not only to ignore a portion
4 of it, but to ignore all of it. He says it's not
5 important.

6 And he makes this conclusion, not
7 surprisingly, on a very limited investigation, which
8 he admits. He says that it's the dominant source.

9 Well, let's look at the evidence in this
10 case. The evidence in this case is undisputed that
11 prior to 2003, that is from the late 1990s, there's
12 been a reduction in point source phosphorus in this
13 watershed -- both Dr. Connolly and Dr. Engel
14 testified to this -- from point source discharges.
15 There have been upgrades to the wastewater treatment
16 plants. From 1998 or so to 2003, the reduction has
17 been from 200,000 pounds to 90,000 pounds. That's a
18 55 percent reduction.

19 Logically, if there's that much of a
20 reduction, we would see a corresponding improvement
21 in water quality in this watershed, yet we have not
22 seen it. That belies the fact that soluble reactive
23 phosphorus, as he calls it, or dissolved phosphorus
24 from wastewater treatment plants is the only
25 important phosphorus for water quality in this

1 watershed.

2 Also, he points out and he concedes that
3 nonpoint source isn't all particulate. On
4 cross-examination, he conceded that it's comprised,
5 that is nonpoint source, is comprised primarily of
6 dissolved phosphorus.

7 In fact, the evidence is undisputed from
8 Dr. Olsen is, that at least 50 percent -- or about
9 50 percent of the phosphorus running off from
10 poultry-applied fields is soluble reactive
11 phosphorus.

12 Well, one of his key tenets is soluble
13 reactive phosphorus is all that's important. That's
14 disputed by a biologist, Dr. Stevenson, and
15 biologists Cooke and Welch. But in any event, even
16 given that tenet, which is not to be based any
17 credibility, still nonpoint source are significant
18 contributors of the type of phosphorus he says is
19 important.

20 Again, when he -- on cross-examination, he
21 then had to admit that obviously there are runoff of
22 these important phosphoruses into the rivers and
23 streams of the IRW.

24 Now, Dr. Connolly also admitted with regard
25 to the speed aspect, you have this only SRP

1 phosphorus part, then he said, and nonpoint source
2 moves too fast. It just goes too fast, Judge, so
3 the algae can't see it.

4 Well, he conceded on cross-examination that
5 algae does and, in fact, does grow in the Illinois
6 River. Contrary to Mr. Duncan's picture of clear
7 water, there are some murky waters that are green in
8 the Illinois River and the Barren Fork, for that
9 matter, and there are benthic algae in those rivers
10 also.

11 But his analysis was of Tahlequah, and he
12 looked at the -- only the main stem of the river,
13 assuming that the main stem would be relevant to all
14 the other small creeks and tributaries and that
15 somehow the main stem would be similar rainfall and
16 represent all the rainfall and the velocities
17 throughout the IRW. That's simply not credible.

18 The other thing that's kind of amusing and,
19 frankly, gets to the point of amusing of his
20 analysis is that I guess when he gave this
21 testimony, he must think that phosphorus comes down
22 in one slug and that the algae just kind of has to
23 reach out and grab it, and if it doesn't grab that
24 molecule, tough luck, no algae growth.

25 The problem is that the algae sees lots of

1 phosphorus. It keeps flowing by. There's not just
2 one molecule or a big bunch of molecules running by
3 from phosphorus. It's a continuing, consistent flow
4 of phosphorus. And the algae can use it as it flows
5 by.

6 His velocity theory assumes that there's
7 not more phosphorus right behind the phosphorus that
8 just passed. But logic tells us, Your Honor, that
9 that's not the case. And the evidence of this case
10 shows that it's not the case.

11 There are lots of other issues with
12 Dr. Connolly. We looked at his own maps, and we
13 pointed out, gee, Dr. Connolly, under base flow
14 conditions, how come we have high SRP and high algae
15 levels upgradient and on streams where there's no
16 wastewater treatment plant. Well, he had to
17 concede, yeah, there are probably some minor
18 influence and minor impact. His minor impact is
19 just his reaction to cross-examination.

20 He didn't evaluate poultry house
21 contributions to SRP. He conceded that. He only
22 looked at one source. One source only: Wastewater
23 treatment plant.

24 Now, Your Honor, I'm going to conclude
25 briefly with the injury evidence, and I can do this

1 very quickly because most of it is undisputed.

2 Again, as we pointed out at the beginning,
3 frankly, I don't believe the defendants have offered
4 any evidence that there has been a change in algae
5 productivity in this watershed in the last 50 years,
6 and those changes are both in suspended, attached,
7 blue-greens, and obviously changes in trophic state
8 of Lake Tenkiller.

9 Those changes affect five different types
10 of injury. Habitat and community structure. Now,
11 Your Honor, the evidence against that was
12 Dr. Chadwick. We've already talked about that. He
13 suggested that maybe there's still a good community
14 structure in the streams for fish, but there was no
15 dispute that there has been a change in the
16 community structure and evidence of change in Lake
17 Tenkiller. That is the DO temperature squeeze.
18 Aesthetics, they actually concede there's been a
19 change in aesthetics, but I guess they just say
20 that's not important.

21 Disinfection byproducts, there's no dispute
22 that we have disinfection byproducts in this
23 watershed. That's important because there's 22
24 wastewater treatment plants.

25 Toxins are being produced by the -- or the

1 potential for toxins are being produced by
2 blue-green algae, all resulting in water quality
3 standards.

4 Your Honor, the habitat community structure
5 has been affected in the ways shown in slide
6 No. 96. Clearly, it's undisputed that dissolved
7 oxygen has been affected in the streams in Lake
8 Tenkiller and that's there's a change in smallmouth
9 bass and walleye.

10 The court has had the pleasure, Your Honor,
11 I would just say, I believe, in looking at the
12 pre-eminent and hearing from the pre-eminent experts
13 of stream ecology, Dr. Stevenson, and limnology in
14 lakes, Dr. Cooke and Welch. These people --
15 Dr. Cooke and Welch are both retired. They have no
16 real stake in this. They've made their reputation.
17 They are the pre-eminent people of limnology, lakes
18 and reservoir studies, in this country, I believe.

19 They testified -- and there was no
20 limnologist testimony against them. We heard a
21 little bit from Dr. Connolly, who's an engineer, and
22 we heard a little bit from Dr. Sullivan, which I'm
23 not really sure what he is, maybe he's an acid rain
24 expert, but there was no limnologist that took the
25 stand that argued with the trophic state evidence

1 you heard from Dr. Cooke or the fish and habitat
2 changes that you heard from Dr. Welch. That's
3 undisputed.

4 Your Honor, the aesthetics are apparent.
5 We've got scums in Lake Tenkiller. We saw a picture
6 of that from Mr. Bullock. We have disinfection
7 byproducts. Those issues are here, Your Honor.

8 The evidence is -- the dispute is that,
9 well, there are disinfection byproducts being
10 produced in other locations. Well, that has never
11 been a defense to an environmental case. If it is,
12 then I would have won a lot more cases defending
13 polluters, Your Honor. You can't just say, well,
14 other places are polluted; therefore, we don't have
15 to deal with the pollution in this place. That
16 would be ridiculous.

17 We also have, Your Honor, the issue of
18 toxins. Now, what Dr. Cooke testified to,
19 undisputed, is that there's been a shift in the
20 predominant algae in Lake Tenkiller today is
21 blue-green algae that produces toxins.

22 There are some Corps of Engineers samples
23 from this lake taken independent of this case that
24 have found toxins. And there was some dispute,
25 although I don't believe it's a credible dispute,

1 that water treatment plants do not remove these
2 toxins unless you're using activated carbon. But a
3 simple alum sand treatment will not remove these
4 small molecules of their carbon-based toxins.

5 The water quality standards that have been
6 violated are numerous.

7 And, Your Honor, I want to finish with just
8 a brief discussion about what this import means.
9 Dr. Engel, with his model, had four scenarios. He
10 looked at what will happen if things remain the
11 same, what will happen if there's growth, what will
12 happen if there's cessation, and what will happen if
13 there's cessation and buffer strips.

14 Dr. Wells -- I'm not going to go into
15 details today, I don't have time permits -- also did
16 an evaluation with similar results for the lake.
17 And what we find, Your Honor, is what's shown on
18 Oklahoma Exhibit 1100. If we keep the same, that's
19 the black line here, then the pollution will
20 basically remain the same.

21 Now, if poultry waste is removed, it shows
22 within the first 10 years an 18 percent reduction,
23 and over the next 50 years, about a 50 percent
24 reduction. Why does it take so long? Because of
25 this banked phosphorus that's in the land of the IRW

1 now that will continue to leach out over time.

2 The important point here, Your Honor, is
3 that Dr. Engel produced this analysis by removing
4 poultry, then, from his GLEAMS model. It shows
5 again that poultry -- another piece of evidence that
6 is significant because there is a reduction in this
7 watershed.

8 Now, what we should expect to occur is the
9 growth scenario. If this court does nothing to
10 change the activities of the defendant, then being
11 good business people, they will continue to grow and
12 they'll continue to operate the way they are today.

13 If that happens, Your Honor, then the
14 phosphorus contributions in 50 years will double.
15 And Dr. Cooke's testimony in this case, undisputed,
16 was that the hypereutrophic -- what we're seeing
17 hypereutrophic conditions in LK-4 and 3 will spread
18 all the way down to LK-01 and 2. So we'll lose that
19 type of clarity.

20 So, Your Honor, I guess the question for us
21 today, and I'll now leave to Mr. Nance, is what is
22 the legacy that we're going to provide for our kids
23 and our grandkids and for ourselves if we get a
24 chance to live another 10 or 20 years? Is will it
25 be a legacy of pollution, or will we have a legacy

1 that we can say that we did something important to
2 clean up the waters and restore the natural beauty
3 of this watershed? Thank you, Your Honor.

4 THE COURT: Thank you, Mr. Page.

5 MR. BULLOCK: Judge, could we take our
6 morning break?

7 THE COURT: Do we have time?

8 MR. BULLOCK: The plan was to be finished
9 at 11:30.

10 THE COURT: I can sit. Mr. Nance, do you
11 need to take a break?

12 (Off-the-record discussion was had.)

13 THE COURT: We need to send a file, but
14 we're running behind already. Let's take maybe five
15 minutes.

16 (Whereupon a recess was had.)

17 THE COURT: Mr. Bullock, we need to enforce
18 some discipline with regard to time. We started at
19 9:05 on the computer clock, just maybe a minute or
20 two after 9:00 on the clock on the wall. And I'll
21 give Mr. Nance that additional time, but we've got
22 to constrain this.

23 MR. BULLOCK: What I was going to ask the
24 court is if we could take 10 minutes from the 45 we
25 reserved for rebuttal and put it on Mr. Nance so

1 that we then will have 35 minutes for rebuttal this
2 afternoon at the conclusion. So that will give him
3 his 45.

4 THE COURT: All right. Mr. Nance, you may
5 proceed.

6 MR. BULLOCK: One other brief point. I
7 misspoke in terms of George's on the Ritter farm.
8 They did stop application after they got that high
9 STP of 2000 or whatever.

10 MR. WEEKS: I appreciate that correction,
11 Your Honor.

12 THE COURT: Mr. Nance.

13 MR. NANCE: Your Honor, if it please the
14 court. Since the court is evidently interested, and
15 properly so, about the defendants' defense under the
16 Oklahoma Registered Poultry Feeding Act and the
17 Animal Waste Management Plans, I'm going to jump
18 ahead and address that kind of out of order, if
19 that's all right with you.

20 The defendants note that ODAFF has
21 statutory authority, they say, to change the
22 application rate. What the actual statute says is
23 they can propose a ruling. And the court is
24 familiar, I'm sure, under the Administrative
25 Procedures Act that rule changes are subject to

1 public notice and hearing and comment and subject to
2 review by both Houses of the Legislature and by the
3 governor.

4 I would suggest that -- that the likelihood
5 of that passing was summarized in another context by
6 Mr. Fite when he said you can't fight the farm
7 lobby.

8 THE COURT: Well, that's what's largely
9 been unstated here throughout, although I tried to
10 state it at the very beginning. We've got the NRCS,
11 you know, STP 300 standard here.

12 Now, you may disagree. I may disagree.
13 But that's what we've got. Basically you're -- by
14 asking this court to impose a 65 STP, you're asking
15 this court to displace something that you just said
16 has been adopted by a state agency, it's been
17 subject to state legislative review, and the
18 governor could have stopped it, correct?

19 MR. NANCE: Well, I think incorrect because
20 of the political situation I just alluded to and
21 Mr. Fite alluded to. But --

22 THE COURT: But they could have done it.
23 That's the law of the state. The State is bringing
24 this case. We've got an STP 300 standard. Now, you
25 know, based upon all that's been presented here,

1 frankly, the agricultural lobby is strong in this
2 state; right?

3 MR. NANCE: Yes.

4 THE COURT: That's the law. And you
5 represent the State of Oklahoma here, correct?

6 MR. NANCE: I do, indeed.

7 THE COURT: So what's this court to do?
8 Just tell the state legislature with a bang of my
9 gavel that that's out the window?

10 MR. NANCE: Not at all.

11 THE COURT: And that by disagreement by a
12 federal court, I can just make the law go away?

13 MR. NANCE: No, you can't make the law go
14 away. You can enforce the law and you can do equity
15 in this case, and as a remedy for the nuisance and
16 the trespass that we have in this case, you can
17 impose on these defendants an equitable remedy. You
18 don't have to set 590 aside. 590 is a ceiling. It
19 doesn't require application up to 300. It says in
20 this watershed 300 is as high as you can apply.
21 But -- so you have to apply that.

22 THE COURT: But your own state contract
23 writers are allowing them to apply up to STP 300.

24 MR. NANCE: They are, and -- but the
25 contract plan writers can't authorize a violation of

1 the law, and that's what we're talking about here
2 today. The law is no runoff or discharge from the
3 land application site. Now --

4 THE COURT: I understand, but you don't
5 have the folks up there enforcing it, right?

6 MR. NANCE: We have two gentlemen who split
7 up this watershed and some other territory who are
8 in charge of inspections and enforcement. And
9 you've seen the case that we've put on to prove
10 edge-of-field runoff and all of that. They simply
11 don't have the means or the training to do what
12 we've done in this case, and that's prove serious
13 substantial nonpoint source runoff originating with
14 this industry.

15 And having shown that, I think that we are
16 -- we're entitled to the remedy I'd like to discuss
17 with you a little bit later.

18 THE COURT: One of the things that neither
19 of you have addressed in your proposed findings and
20 conclusions, and I'd like for you to think at least
21 about the possibility of submitting supplemental
22 proposed findings and conclusions by a reasonable
23 date, but it is this general idea, and I'll throw it
24 up and allow you to shoot it down as a possible
25 approach here, but to the extent that the State of

1 Oklahoma allows application of poultry litter up to
2 a certain amount, that perhaps could remain, given
3 that the State has allowed it through its
4 regulations, but to the extent there is greater
5 poultry litter in a barn than a grower can apply,
6 that the defendant poultry integrators be required
7 to provide a market either by buying it from the
8 growers and transporting it out of state, or
9 providing the market, being the market maker as was
10 tried previously but has since ended, to allow that
11 excess poultry litter beyond that which the State
12 itself permits to be applied on these growers' farms
13 to be transported out of state.

14 So just a thought, and we'll discuss this
15 here at the end. Go ahead.

16 MR. NANCE: Yes, sir. The purpose of the
17 -- I'm going to refer to it as the act because it
18 has such a lengthy and cumbersome full title. But
19 the purpose of the act, as testified by Ms. Gunter
20 when she was here, was, one, just to let the State
21 know who was out there doing what, how many growers,
22 what they were doing. But the other purpose of the
23 act was to ensure that there was no pollution from
24 the operations that were registered. And that is --
25 that's explicitly in the statute we'll look at in a

1 moment. The act is not a safe harbor. It's not
2 like an NPDES permit that says you can put so many
3 pounds of phosphorus in the water per day. What the
4 act says is you can't let it leave your property.

5 And the act, I think, has had a mixed
6 result in operation, one, that we do know who the
7 operators are and we do get them some education and
8 we do give them some guidance on how to operate.

9 But what the act did was after the act came
10 into effect, it made the ability to land apply
11 conditional on compliance with the act and the
12 Animal Waste Management Plan.

13 Now, we're talking about this statute at
14 all, I assume, because the defendants are
15 responsible for the actions of their growers.

16 The court has ruled this act doesn't apply
17 to the defendants. And so we're spending a lot of
18 time thinking about an act that does not apply to
19 the defendants in this case, but only applies to
20 their growers. And we are not here having 77
21 proceedings or proceedings against 77 growers for
22 violating the no-runoff standard. What we're here
23 to do is to redress the massive pollution that
24 unreasonably interferes with the water quality in
25 the state that arises from this industry and for

1 which the defendants are directly liable as well as
2 vicariously liable.

3 And I'd ask the court to remember as we
4 think about Animal Waste Management Plans that they
5 are, as is the phosphorus index in Arkansas, a
6 site-specific tool which gives no consideration
7 whatsoever to the cumulative effect of the entire
8 industry. It's the cumulative effect of the
9 industry, something that's beyond the ability of any
10 grower to correct, even though the runoff from their
11 operation contributes to it, that we need to remedy
12 here.

13 And there is no law that authorizes those
14 contract plan writers to go out and say that there
15 can be runoff or discharge from the planned site.

16 Ms. Gunter testified as the common sense of
17 the matter is that 300 pounds per acre is the
18 maximum. It's not required.

19 If we could start with slide 114, please.
20 Well, that's not the one I expected. Let me -- I
21 will -- I'll tell you what Ms. Gunter said, and
22 we'll get the slide when we can. This was on page
23 2902. There we go. I see our numbers don't match.

24 THE COURT: Which slide is it, Mr. Nance?

25 MR. NANCE: I think it's going to be

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1 numbered 115, Judge. I'm looking at an antique
2 set. I apologize for the confusion.

3 THE COURT: Thank you. I've got it.

4 MR. NANCE: The question was: "Does ODAFF
5 view an AWMP as a permit?" And the answer is:
6 "No."

7 The next slide, which I guess is now 116,
8 has some more testimony from Ms. Gunter, if we could
9 go there. The question was: Does an AWMP permit
10 any amount of pollution to leave the application
11 site or go to the waters of the state?

12 She said the statute absolutely prohibits
13 pollution.

14 Next: In ODAFF's view, has the State ever
15 consented to discharge or runoff of waste from a
16 land application site?

17 Not to her knowledge.

18 At the bottom of that slide that will go
19 over to the next slide: If a grower or operator
20 under the act did everything in the precise written
21 terms of the plan, AWMP, but discharge or runoff
22 occurred from the application site, would the grower
23 be complying with the act?

24 No.

25 Would the grower be complying with the

1 requirements of the plan?

2 No.

3 Because incorporated in it is the no
4 discharge or runoff. That's the overarching theme.
5 Whose responsibility is it?

6 It's the grower or the applicator.

7 That's the testimony and that mirrors, in
8 fact, the statute language that we'll look at in a
9 moment.

10 Even though I think the statute is clear,
11 that's ODAFF's long-standing administrative
12 interpretation of the statute, and it's entitled
13 respectfully to the court's deference.

14 You asked Mr. Bullock about title --
15 Oklahoma Statute Section 4 which has been on the
16 book for a long time and deals with things that are
17 authorized by the express terms of a statute.

18 First of all, that can only apply to
19 Oklahoma conduct. There's nothing that Arkansas can
20 do that authorizes pollution in Oklahoma. And they
21 haven't authorized pollution in Oklahoma. They
22 began their regulatory regime over there in 2006,
23 which has its own variety of a no runoff and no
24 substantial runoff in Arkansas in the rules. But
25 there has been a lot of loading from Arkansas before

1 that time.

2 And you asked Mr. Bullock about the effect
3 of this statute on the federal common law of
4 nuisance.

5 I think the best and -- I think the best
6 analysis of that is there is no Oklahoma statute,
7 express Oklahoma statute that authorizes an
8 interstate nuisance originating in Arkansas. There
9 isn't such a statute. There's been none argued. So
10 clearly this section would not apply to the federal
11 interstate common law nuisance claim that we have
12 brought.

13 I'm going to go to the *Herd* case once again
14 for a different purpose because *Herd* analyzed the
15 statutory authorization defense, and I think
16 analyzed it correctly.

17 In *Herd*, the defense was, well, at least in
18 part, we've been mining on lands belonging to an
19 Indian tribe. There's certain federal statutes that
20 talk about how to do that. There were certain
21 federal regulations that applied and, in fact, there
22 were even form leases that applied if you were going
23 to be -- if you were going to be operating in Indian
24 country. Federal form leases somewhat analogous,
25 perhaps, in this case to an Animal Waste Management

1 Plan.

2 Slide 117 -- thank you, Gina -- is from
3 *Herd*, as are several of the next slides. But the
4 court in *Herd* talked about that case was not a
5 situation of the legislature acted with intent of
6 sanctioning certain nuisance-type activities for the
7 public good.

8 Well, neither has the Oklahoma legislature
9 in this case. It has not sanctioned a nuisance
10 because there's some public good to be served by it.

11 In fact, it's prohibited nuisance from this
12 industry. 118, please. Thank you. Here a couple
13 more quotes from *Herd* on this slide.

14 Your Honor -- and, again, it talks about
15 kind of the rationale for the statutory
16 authorization defense. And the first one there on
17 that slide, that the public good requires some
18 necessary nuisance, the court in *Herd* said that's --
19 that didn't apply in *Herd*, and I suggest to you it
20 doesn't apply in this case either. *Herd* quoted
21 corpus juris, the second quote on that slide, a
22 statutory sanction may not be pled in justification
23 of acts that are authorized by the express terms of
24 the statute unless basically the legislature
25 contemplated the doing of the very act which

1 occasions the injury.

2 In this case, the legislature has
3 prohibited the very act that occasions the industry,
4 which is injury, which is runoff and discharge from
5 the application site.

6 119. And this probably should have an
7 emphasis added on it because I think we highlighted
8 here or we bolded here some language that was not
9 bolded in the opinion. "A license, permit or
10 franchise to do a certain act can't protect the
11 licensee who abuses the privilege by erecting or
12 maintaining a nuisance."

13 And the fact that -- on the bottom one --
14 the first one is quoting the Tenth Circuit, which is
15 in turn quoting an Oklahoma case. The bottom quote
16 on page -- on number 119 is "The fact that a person
17 has some authority from the legislature or
18 municipality to do certain acts doesn't give the
19 right to do such acts in a way constituting an
20 unnecessary interference with the rights of others."

21 That was the court's analysis in *Herd*, but
22 I think it applies precisely to the situation we
23 have here. They were using as a defense federal
24 statutes, federal regulations and federal form
25 leases, some of which even told them they had to

1 leave the mine tailings in Indian country. Told
2 them where you had to leave it. The court said, no,
3 that's not an adequate statutory authorization
4 defense.

5 In this case, the legislature didn't
6 contemplate runoff to the waters and say, well, the
7 poultry industry is so important we're willing to
8 endure that, we're willing to take a certain measure
9 of pollution. In fact, they said just the
10 opposite. The legislature didn't decide that the
11 benefit of poultry growing justified the pollution
12 of waters. In fact, it prohibited pollution.

13 119. This is -- 119 -- I'm sorry, that's
14 one we've already looked at. 120, if we could,
15 please.

16 This is an excerpt from the Oklahoma
17 Statute Title 2, Section 10-9.7(C). And it talks
18 about what has to be in an Animal Waste Management
19 Plan, but it says unequivocally and unambiguously,
20 "Discharge or runoff of waste from the application
21 site is prohibited."

22 So the defendants have taken a legislative
23 enactment designed to protect the environment and
24 have turned it on its head as making it a defense to
25 pollution which is entirely contrary to the defense

1 that they're using, the statutory authorization
2 defense, and should not be permitted to stand in
3 this court.

4 The court, respectfully, should respect and
5 effectuate the terms of the act rather than the fact
6 that Animal Waste Management Plans may not function
7 as intended and anticipated by the legislature.

8 In our material, we have the *Sharp* case v.
9 the 251st Street Landfill. I think we've talked
10 about that case before. In that case, the health
11 department had permitted a landfill, but an
12 injunction was issued because the agency decision
13 did not affect the legislative purpose.

14 In conclusion on this point, Judge, there
15 is no safe harbor in this act. There is nothing
16 analogous to a NPDES permit. The provision of the
17 statute is very clear; there just simply cannot be
18 pollution, there cannot be runoff, discharge or
19 pollution. And nothing that the contract plan
20 writer does in writing a plan can authorize breaking
21 the law.

22 The defendants have foresworn any defense
23 based on laches and estoppel, but essentially make
24 that by another name, and that is, well, we relied
25 on the plans or our growers relied on the plans or

1 we, the defendants, thought if our growers relied on
2 the plans, there would be no runoff.

3 Well, one, laches and estoppel don't apply
4 against the State. I don't think anybody is going
5 to contradict that well-established principle of
6 law.

7 And so any reliance or any belief on the
8 part of the growers or the defendants that the plans
9 are enough is irrelevant in the present case.

10 Now -- and, in fact, I don't really think
11 the defendants believe that. They say they did, but
12 you can't look at -- let's look at slide 107 real
13 quick, and I'm going to move through these pretty
14 quickly. 107. We've seen this before. This is our
15 Exhibit 1154. It's the mass balance pie chart, and
16 it shows that 75 percent -- more than 75 percent of
17 the phosphorus coming into this watershed comes from
18 poultry.

19 Slide 108, please. This is an excerpt from
20 the USGS document, Exhibit 5861, which says that
21 during the time period 1997 to 2001, more than 86
22 percent of the phosphorus loading came in runoff.

23 Next slide, 109. There we go. That's the
24 next USGS chart from 2000 to 2004. 83 to 90 percent
25 of the loading comes in runoff.

1 If the defendants look at that, they have
2 to know that they're contributing to the runoff, and
3 I believe they do.

4 Slide 110 is a new graphic, it's extremely
5 sophisticated. It's a pie chart that just shows an
6 80/20 split. 80 percent at least of the loading in
7 this watershed is from runoff phosphorus. The 20
8 percent is from point source phosphorus.

9 And, Judge, the regulatory systems, the
10 NPDES permits may be able to squeeze down the size
11 of that nonpoint slice a little bit from wastewater
12 treatment plants, but we're not going to get a
13 solution until we address the 80 percent of the pie
14 that's runoff.

15 And there's really two ways to do that,
16 since most of that 80 percent is going to be coming
17 from the three-quarters of the overall loading to
18 the watershed that's poultry. A big part of that --
19 big piece of the pie is from poultry.

20 The legislative -- the administrative
21 procedures processes in Oklahoma and Arkansas simply
22 can't shrink that pie, that part of the pie, and the
23 only means to do that is an injunction by the
24 court.

25 We could attack that in two different

1 ways. One would be to reduce the amount that comes
2 in, the 75, 76 percent of mass balance that comes
3 from poultry; or it could remove, as the court in
4 its suggested supplemental findings of fact -- I
5 think we all recognize that phosphorus has to leave
6 the watershed.

7 You've reminded me that I represent the
8 State of Oklahoma here. The State is here on behalf
9 of the public, the hundreds of thousands of people
10 that drink the water from this watershed, that fish,
11 swim, canoe or ski there. They have little or no
12 idea what goes on here in this courtroom. They may
13 read press accounts about it, but they cannot have
14 appreciated how hard the court has worked and the
15 parties have worked.

16 But even if they don't know exactly what's
17 going on, I think they have a claim on your
18 conscience as a chancellor of equity to see that
19 right is done here.

20 And there's only one way. There is no
21 plan B. There's no other way to shrink this 80
22 percent of the pie but an injunction from this
23 court.

24 Now, the problem has arisen in this case
25 because the defendants, for economic reasons, have

1 concentrated their operations in the watershed
2 around their feed mills and their processing plants
3 and such. It's a very efficient system. It's
4 commendably efficient. And it's delivering meat at
5 a reasonable price, and that's a good thing. We
6 don't have any problem with that.

7 But because the waste is spread very near
8 where the chickens are, the turkeys are, the
9 concentration of the birds leads to concentration of
10 the waste. And the way the defendants have managed
11 their property, which is the birds, they have
12 created a nuisance and a trespass.

13 They could have had a different business
14 model that spread their houses far and wide so that
15 the waste would be spread far and wide. Waste would
16 maybe not then be an issue, but their transportation
17 costs would be higher. So they've made an
18 economical decision to minimize their transportation
19 costs around their facilities, and that has led to
20 the nuisance in this case.

21 Let's look at slide 111, please. The
22 evidence is -- in this case is un rebutted that the
23 defendants own the birds, they control the birds,
24 they dictate every term of every contract with every
25 grower. It's a take-it-or-leave-it contract. The

1 defendants control when birds are placed and picked
2 up.

3 And we're asking the court to enter an
4 injunction requiring the defendants to ensure that
5 waste from their birds is responsibly managed at the
6 defendants' expense. And if necessary -- there may
7 be a lot of ways they can do that, and I don't want
8 to -- I don't think the court needs to micromanage
9 the relationship between the defendants and the
10 growers, but I think there needs to be -- as a
11 backstop, if nothing else works, the defendants need
12 to be enjoined from placing birds with any grower
13 who doesn't cooperate with the effectuation of the
14 injunction we're seeking, because the defendants
15 have absolute control over the birds and their
16 delivery and their timing. And the court, I think,
17 can order that -- can control that by injunction.

18 We have to limit the amount of waste in the
19 IRW and we have to have adequate documentation about
20 where the waste is going. And we have to
21 investigate and implement other remedies -- I'll
22 talk about that in a minute -- at the defendants'
23 expense.

24 The first step, though, needs to be a
25 moratorium on land application in the near term, and

1 that's just for a very practical reason, because
2 there is already -- as you recognized in your order
3 last evening, there is some infrastructure in place
4 for removing waste. There's some, but there's not
5 enough. There is some market for the waste, but
6 there's not enough. And until we can get that sort
7 of thing adequately up and running, there should be
8 a moratorium on the application of waste in this
9 watershed. And experience tells us, and there's
10 some testimony in the case that the waste can be
11 left in a house for some period of time, although
12 obviously not forever.

13 The evidence in this case demonstrates, as
14 Mr. Page said, that the phosphorus is the limiting
15 factor for algae growth in the waters of this
16 watershed. And the evidence is really undisputed in
17 this case that the defendants' operations in this
18 watershed and the counties that include the
19 watershed produce more phosphorus than can be
20 agronomically used. Both Oklahoma and Arkansas
21 recognize that there's nutrient surplus or nutrient
22 limitations in this watershed.

23 The unreasonable management of their birds
24 and the waste that comes from that has unreasonably
25 affected the water quality in Oklahoma, and that's

1 the nuisance, or the trespass is when the waste get
2 in the water.

3 You've heard testimony that 65 soil test
4 phosphorus is the agronomic limit for the kind of
5 crops grown in this watershed.

6 And the fact that poultry waste has
7 historically been applied for nitrogen has led to
8 the astronomical STPs that we've talked about in
9 this case.

10 Dr. Johnson told us that no farmer could
11 overapply commercial fertilizer and afford to stay
12 in business and get the kind of STPs we see here.

13 Our proposal is that in the Illinois River
14 Watershed, poultry waste may continue to be used
15 where there's a need for both nitrogen and
16 phosphorus. That is, before the application, there
17 is an STP taken by a reputable person we suggest
18 working for or with the approval of a special master
19 to be appointed by the court where there is at the
20 time of application an STP of lower than 65.

21 But it should be applied for no more than
22 the nitrogen needs of the expected crop, reasonable
23 crop yield. That's the way it's supposed to be done
24 now. There are ways to calculate in 590 and other
25 places that show you if you expect a

1 three-ton-per-acre harvest of Fescue, how much
2 nitrogen you need. There's sometimes nitrogen in
3 the soil, a little bit of nitrogen in the soil, and
4 you're supposed to put on the difference. That
5 would inevitably, I think, elevate the STP at least
6 temporarily above 65, but not that high above 65.

7 THE COURT: Interestingly, your own expert
8 who suggested 65 changed his testimony on the stand
9 and said, well, it's good at 120 so that you can get
10 an even 65 across the field.

11 It's a relatively recent area of science.
12 People haven't even been concerned about phosphorus
13 since up until 20 years ago.

14 MR. NANCE: Well, and science has
15 determined what the agronomic critical level is, I
16 don't know exactly when, but for some time we know
17 65 is reliable and we're confident in it.

18 THE COURT: For forage grasses.

19 MR. NANCE: For forage grasses. If you
20 look at the Code 590, it's 65 for everything.
21 Forage grasses is mostly what we're growing here.
22 Arkansas says it's 100. Dr. Johnson said he could
23 find no scientific basis for that, certainly no
24 scientific basis for the 300 in Code 590.

25 THE COURT: Yet his own department head

1 disagrees with him at Oklahoma State University.

2 MR. NANCE: Wouldn't be disagreeing with
3 him on the agronomic critical level of 65. I think
4 everybody at OSU agrees on that. The waste should
5 be applied on fields where it's otherwise
6 appropriate in terms of slope and nearness to
7 streams, and all of that that's in 590 already or in
8 the Arkansas phosphorus index. You look like you
9 had a question. Okay.

10 But, Your Honor, where there isn't a need
11 for phosphorus in the watershed, the waste should be
12 moved to where it is needed or at least out of -- at
13 least out of the watershed where it can be applied
14 as appropriate there. There's some infrastructure
15 to do that.

16 The defendants have created in the
17 Eucha-Spavinaw case the BMPs, Inc. There's Roger
18 Collins who has testified that he's a hauler that
19 makes his living moving the stuff out. The
20 taxpayers are doing a certain amount of this in 319
21 projects on both sides of the Arkansas line.

22 But it's time, we think, Your Honor, for
23 the defendants to assume responsibility for the
24 waste generated by their birds.

25 They should report to a special master to

1 be appointed by the court just where the waste
2 goes. How much waste is generated, where it goes,
3 to ensure that it's applied at appropriate sites,
4 and should report any grower who is unwilling to
5 cooperate with the remedial regime we're talking
6 about.

7 There should be a remedial investigation, a
8 further remedial investigation. On this record
9 before you right now, Your Honor, there is ample
10 evidence that there are Best Management Practices
11 that help reduce nonpoint source pollution: Buffer
12 strips, litter transport, which is basically what
13 we're talking about, and other methods.

14 Ms. Phillips talked about her demonstration
15 projects in the Beaty and Peacheater Creek areas.

16 She also said that \$20.6 million was enough
17 for 10 percent of the buffers needed in the Oklahoma
18 portion of the watershed.

19 That gives you a magnitude of how big the
20 remedial need is. But what's not in the record
21 right now is the exact amounts, locations and costs
22 for these remedies and where they should be.

23 We would ask the court to appoint a special
24 master who would in turn find appropriate people to
25 conduct such a remedial investigation and report

1 back to the master, and the master in turn should
2 make recommendations to the court and -- about what
3 further remediation is needed beyond the 65 cutoff.

4 THE COURT: Mr. Elrod's own videotape
5 showed farmers clear-cutting to the edge of the
6 stream, which defendants admit causes both erosion
7 there of the stream, and obviously there's no buffer
8 zone.

9 MR. NANCE: Obviously, there's no --

10 THE COURT: There's not much need for a
11 special master. It's on the record here submitted
12 by the defendants.

13 MR. NANCE: The exact amount of money
14 needed to remedy that sort of process and to buy the
15 buffer strip or lease it from the landowner, that's
16 something we don't have in the record and we think
17 that the court needs to be advised of.

18 Judge, let's look at Exhibit 335, which is
19 slide No. 112. You've seen this before. This is
20 one of the advertisements that defendants used. And
21 it's -- in this advertisement, they're telling the
22 people of Oklahoma the good things they want to do.

23 And if -- Gina, if you could blow up that
24 center section.

25 We believe an injunction by the court

1 should do the things that the defendants have
2 promised and haven't done. Develop a new
3 science-based standard for nutrient management that
4 protects our water resources. That's the 65 STP
5 limit that we've talked about. Incorporate that new
6 standard in Nutrient Management Plans of all poultry
7 farms. The defendants thought that ought to be
8 done.

9 I don't know that you need to rewrite every
10 plan, but you ought to put the 65 governor on it.
11 Reduce the amount of poultry litter applied within
12 the watershed by transporting, they say, 200,000
13 tons out. I think that's not going to be enough.
14 But they recognize the need to reduce the amount of
15 litter.

16 Funding environmental projects like farmer
17 education programs so they'll know not to clear-cut
18 right to the river. And matching grants for litter
19 transport. The litter should be transported at
20 their expense.

21 Although Dr. Taylor says you may be able to
22 move it, depending on the cost of commercial
23 fertilizer, 200 miles, 300 miles, some distance that
24 would get it far enough from the watershed so that
25 it could be effectively used.

1 Creating and funding a nonprofit
2 organization to acquire and maintain conservation
3 easements and buffers along streams and rivers to
4 protect against nutrient runoff and erosion. We
5 suggest the special master would be the one that
6 would organize that effort.

7 And reporting to you how well we're doing.
8 The defendants need to report how well they're
9 doing, need to report it to the special master and
10 turn to the court so the court will know that after
11 our considerable effort in this case, there is, in
12 fact, a remedy on the way.

13 The four factors justifying an injunction.
14 I'm going to be very quick on that. I think
15 Mr. Bullock demonstrated that we've prevailed on the
16 merits. Mr. Page talked briefly about the harm, but
17 there's more detail for that in the findings of fact
18 and conclusions of law.

19 Threatened injury outweighs harm to the
20 other party. Well, we've cited law, and we believe
21 it's the correct law, that when the sovereign is
22 bringing a case, you don't need to balance the
23 equities. Particularly in health and environmental
24 matters where the government is the plaintiff, you
25 don't need to balance equities. But even if you

1 did, the equities favor an injunction by the court.

2 The defendants, in fact, have put on no
3 substantive evidence of burden to them other than an
4 allusion to expense. They have instead, once again,
5 hidden behind their growers, talking about the
6 hardship that would affect them. But that's not the
7 standard for balancing of harms which you shouldn't
8 do. Shouldn't balance in this case in any event.

9 The fact of the growers' status as
10 employees or agents does not make them parties. But
11 the best evidence on burden to the defendants I
12 think we put on, and I mentioned Dr. Taylor talked
13 about how you could move the waste out of this
14 watershed, again, depending on cost of fuel and
15 commercial fertilizer, 200 miles, 300 miles, some
16 distance, some significant distance. And, in fact,
17 Roger Collins is making a living doing just that.
18 And defendants are already perhaps subsidizing
19 some. BMPs, Inc., that's not really in the record,
20 but they created the organization and they
21 recognized that it needs to be moved out.

22 Mr. Pigeon said that you can keep the
23 litter in the barn for a long time without
24 hardship. That goes to the moratorium.

25 Dr. Johnson said that there are areas in

1 eastern Oklahoma that are phosphorus deficient. He
2 looked at the average STPs in the 19 counties in
3 eastern Oklahoma where there was a thousand tons of
4 waste or less generated, and the average was 38.

5 That means that in those counties, there's
6 a need for phosphorus and they're nearby. We've
7 heard testimony about background in this area was 20
8 STP. So there's a need for phosphorus outside of
9 this watershed where it's been concentrated.

10 Ms. Phillips said that, you know, there are
11 areas where there are row crops or vegetable
12 production that need phosphorus, and this could be
13 -- this waste could be used. Again, the defendants
14 have introduced no substantive evidence of the harm
15 to them, which if you're weighing at all, is the
16 standard.

17 The injunction won't adversely affect the
18 public interest. There's public interest in clean
19 water. That's why we have a federal common law
20 nuisance in part is interstate water pollution.
21 That's why we have common law nuisance in the
22 state.

23 We've cited authority that says the public
24 has a right to soil and water that's free from
25 environmental contamination. The public interest

1 can be declared by statute. Oklahoma has a number
2 of statutes that are in our papers that talk about
3 the policy of the State of Oklahoma is against water
4 pollution and considers it a nuisance.

5 Limiting application in the watershed to
6 areas where there's a need for phosphorus gives
7 basically the most economical use of the waste in
8 the watershed because you get the benefit from the
9 nitrogen and from the phosphorus.

10 There would be a inconvenience to some
11 people in the watershed, growers or ranchers or
12 whatever, that might have to buy supplemental
13 nitrogen if their phosphorus is too high. That
14 actually is one of the remedial alternatives that I
15 think the court should study, is whether the
16 defendant should be required to provide at their
17 expense supplemental nitrogen within the watershed.

18 But if you move the phosphorus -- if you
19 move the waste outside the watershed, somebody who's
20 now buying commercial fertilizer will use the waste,
21 and the commercial fertilizer will have to be bought
22 inside the watershed.

23 THE COURT: Mr. Overton, how much time does
24 Mr. Nance have?

25 THE CLERK: He has none remaining.

1 THE COURT: Mr. Nance, if you would, wrap
2 it up, please.

3 MR. NANCE: I will wrap it up, Your Honor.
4 There is no plan B. There's nothing else that will
5 do this job.

6 Only action by the court will solve it, and
7 so the State of Oklahoma asks you to enter an
8 injunction, as we have prayed for.

9 THE COURT: Thank you very much. In order
10 to get this matter done today, the plan was to
11 recess until one o'clock; is that correct?

12 MR. NANCE: Yes.

13 THE COURT: We'll be in recess until
14 one o'clock.

15 (Whereupon a recess was had.)

16 REPORTER'S CERTIFICATE

17 I CERTIFY THAT THE FOREGOING IS A TRUE AND CORRECT
18 TRANSCRIPT OF THE PROCEEDINGS IN THE ABOVE-ENTITLED
19 MATTER.

20

21 S/Terri Beeler
22 Terri Beeler, RMR, FCRR
United States Court Reporter

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